Leavenworth Papers Number 16

Deciding What Has to Be Done: General William E. DePuy and the 1976 Edition of FM 100—5, Operations

by Major Paul H. Herbert

FOREWORD

Leavenworth Paper No. 16, *Deciding What Has to Be Done: General William E. DePuy and the 1976 Edition of FM 100—5*, Operations, deals with the writing of doctrine and focuses on the efforts of General DePuy, the first TRADOC commander, to forge a coherent fighting doctrine for an increasingly complex Army in a time of turmoil. While Major Herbert praises DePuy's emphasis on doctrine and doctrinal change, he charges DePuy with creating a document that failed to engender confidence and thus had to be replaced. Nevertheless, DePuy's important manual revealed a new role for doctrine and sparked a doctrinal renaissance in the Army that led directly to today's widely accepted AirLand Battle doctrine.

This study provides more than just a background to current doctrine. It demonstrates that a well-conceived doctrine is critical to the Army and the nation, describes why doctrine is so difficult to formulate, places doctrine at the center of peacetime professionalism, and admonishes the Army not to become complacent about the contents of its field manuals.

Leavenworth Paper No. 16 illuminates the problems inherent in creating new doctrine and provides readers with a better understanding of our Army's vigilance concerning doctrine.

July 1988

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June 1988

General William E. DePuy

Introduction

The single most important origin of today's AirLand Battle doctrine was the establishment of the U.S. Army Training and Doctrine Command (TRADOC) in 1973 and the writing of a wholly new Field Manual (FM) 100—5, *Operations*, under the supervision of the first TRADOC commander, General William E. DePuy. The writing of that manual, the first doctrinal statement of the post-Vietnam years, is the topic of this Leavenworth Paper. Between 1973 and the manual's publication in 1976, DePuy gave the Army a mighty shove that, for better or worse, rolled it out of its preoccupation with the Vietnam War and on the road to the twenty-first century.

The 1976 edition of FM 100—5 was unlike any of its several predecessors. First, it represented a new role for military doctrine as a key integrating medium for an increasingly complex military bureaucracy. This is a role implicitly accepted by the U.S. Army today. The manual attempted to present an overarching concept of warfare that would rationalize everything the Army did, from training recruits to designing tanks, in terms of how the Army intended to fight. Central to this attempt was the hope that the manual would provide the convincing arguments the Army needed to preserve its investment in new weapons systems. The manual was at once a fighting doctrine and a procurement strategy.

Second, FM 100—5 heralded dramatic changes within the Army. Its authors intended that it play a major role in expunging the bitter Vietnam War experience; shift the Army's attention away from the problems inherent in establishing a volunteer army and onto the battlefield; address the twin issues of a renewed threat to NATO Europe and the increased lethality brought on by the spread of advanced weapons systems; and change the Army's focus from dismounted infantry operations to armored operations.

Third, FM 100—5 was an attempt to demystify doctrine. Its authors discarded the abstractions of earlier manuals in favor of specifics on "how to fight," a phrase deliberately chosen to accent the pragmatic and directive nature of the new manual.

Fourth—and largely because of these new and important roles—the manual was the personal project of General DePuy and his subordinate generals. General officers in shirt-sleeves worked far into the night to write out its final drafts in longhand.

Despite its importance and high-level authorship, FM 100—5 caused a controversy within the Army that quickly led to the manual's displacement, an event DePuy and his assistants neither anticipated nor intended. Indeed, the manual's importance as an origin of current doctrine is largely due to the critique it inspired. This paradox only reflects a greater irony. While General DePuy, more than any other officer of his time, established the importance of doctrine to the Army and defined the complexities of doctrinal change, his own means of dealing with those complexities proved inappropriate. Consequently, the doctrine he wrote did not earn the Army's confidence and so did not endure.

Whether today's or tomorrow's doctrine successfully fulfills the role first pioneered by DePuy and his contemporaries depends largely on whether today's leaders can learn from these officers' earlier experiences.

Of Doctrine and Manuals

1

Doctrine as Choice

Doctrine is defined as "authoritative fundamental principles by which military forces guide their actions."[1] Doctrine is an approved, shared idea about the conduct of warfare that undergirds an army's planning, organization, training, leadership style, tactics, weapons, and equipment. These activities in preparation for future war lie at the heart of the military profession in modern societies. When well-conceived and clearly articulated, doctrine can instill confidence throughout an army. An army's doctrine, therefore, can have the most profound effect on its performance in war.

An army's translation of ideas into published doctrine is a relatively modern phenomenon. Certainly, the armies of Frederick the Great and Napoleon Bonaparte operated according to respective shared, general ideas about the conduct of warfare, but one would be hard pressed to find a published doctrine for their armies. Doctrine, like the conduct of warfare itself, was the personal choice of the commanding general and took its authority from his success on the battlefield. Beginning in the late nineteenth century, the rapidly intensifying technological and bureaucratic complexity of warfare changed the commander's ability to prescribe doctrine. Mass armies with new weapons like indirect-fire artillery required more control and coordination than a single commander could provide. As staffs and various technical services emerged to cope with the new problems, so too did armies begin to publish their principles of organization and procedure, usually in some form of field service regulation.

Today, such regulations and manuals still communicate the decisions and judgment of the Army's top leadership, but that leadership no longer prescribes doctrine. Rather, Army leaders generally provide guidance and approve or disapprove the doctrine, which results from a process of heated debate, intense competition, and sometimes grudging compromise. This wrangling over doctrine happens because Army officers simply disagree over how best to prepare for future war, and they often represent communities (arms or branches) within the Army whose interests will suffer or prosper according to the chosen doctrine. For example, to exploit the technical potential of the tank, the U.S. Army allows some soldiers to spend their

entire careers in tank organizations. Such soldiers soon become part of a self-conscious community whose views of combat, doctrine, equipment, and the needs of the service are influenced by their identification with the armor community and by their sense of competition with every other community within the Army. These communities compete not only for influence but also for funds, prestige, career opportunities, and the simple satisfaction of winning. Since some communities may emphasize a mission (such as counter-insurgency) rather than a weapon, a considerable overlap may exist between communities. That each community supervises major programs in training, education, weapons development, and personnel management, all of which must respond to changes in doctrine, suggests how bureaucratically difficult changing doctrine can be.

The necessity for doctrine to reflect technological change further complicates the process of changing doctrine. Perceived battlefield requirements sometimes inspire inventions, as the deadlocked Western Front of World War I gave impetus to the tank. Sometimes new technical capabilities cause reconsideration of combat techniques, as the invention of the tank did throughout the 1920s and 1930s. The relationship between doctrine and technology becomes complex in highly technical armed forces because technical changes occur rapidly and because a technical advance in one area may require procedural or materiel changes in other areas. Conversely, doctrinal change can be constrained by the Army's necessarily long-term investment in specific weapons systems. Because weapons development takes a long time and because, in democracies, funding for weapons is a highly visible political process, an army, except in the most extreme circumstances, cannot adopt a doctrine inconsistent with its available weapons.

For the Army to be consistent in the development of its doctrine and weapons, it must decide what it wants to do on the battlefield, what its potential enemy can do, and what is technically and organizationally possible. Managing such development in a way that simultaneously avoids chaos and obsolescence is the challenge that faces every modern armed force. Paradoxically, the very need for such management requires an army to create or hire the communities that make doctrinal choice so difficult.

To be sure, many institutions face similar problems of policy choice. The U.S. Army's problem is different because it has little margin for error and no definite criteria for success prior to actual combat. The users of its doctrine are deployed or immediately deployable forces that must be capable of waging war successfully on a moment's notice. As important, they must be so perceived by any potential enemy if containment, deterrence, and conflict control, the pillars of American foreign policy since 1947, are to work. To be in the throes of a major doctrinal change or, worse, doctrinally adrift or, worse yet, committed to a doctrine one's enemy perceives as unworkable is to risk international crisis if not outright military attack, or at least so it seems to officers responsible for the Army's readiness. Their profound responsibilities in this regard lend a powerful sense of urgency to the doctrinal debate.

The U.S. Army, 1973

Doctrine reflects the times in which it is written. This was especially true of the 1976 edition of FM 100—5, *Operations,* which was a direct response to the conditions of the early 1970s. Specifically, the condition of the Army immediately after Vietnam, a major shift in American defense policy, and a relative decline in the Army's budget all influenced the manual's authors.

In 1973, the U.S. Army began to emerge from one of the most traumatic periods in its history. From the 1968 Tet offensive in Vietnam, to the twin shocks of the Cambodian invasion and the killing of antiwar demonstrators at Kent State University in 1970, to the 1971 investigation into the My Lai incident, to the withdrawal from Vietnam and the shift to an all-volunteer armed force in 1973, the U.S. Army increasingly found itself the focal point of public criticism. Racial tensions and drug abuse among soldiers compounded the sense of defeat that, however gilded, attended the withdrawal from Southeast Asia. The Army's theoretically highest-priority unit, the Seventh Army in Europe, was probably at the lowest state of readiness in its history, the victim of a personnel replacement system in Vietnam that used other major commands as replacement pools, resulting in drastic shortages of officers and noncommissioned officers. Public disillusionment with the war in Vietnam became a general sentiment against all war and all military institutions, especially the Army. The U.S. Army in 1973 was in danger of losing its institutional identity and pride of purpose.

This erosion of the Army's physical and moral strength coincided with a major reassessment of U.S. strategic policy with profound implications for the Army. The conclusion drawn in the early 1970s was that the American capacity to repel or deter aggression anywhere in the world was limited and that, therefore, the American means to resist must be allocated to regions of the world according to a priority of U.S. security interests. As a result, many Third World nations resisting aggression would have to handle their own security, with only indirect U.S. assistance and perhaps assistance from major U.S. allied nations within the region. Therefore, in paring down the defense establishment and budget, the United States assumed a "1½ war" contingency instead of the "2½ war" contingency that had prevailed in the 1960s. This meant that the United States would be prepared to fight one general war and one minor war, but it would not fight two general wars simultaneously. This interpretation of U.S. security interests, first enunciated as the Nixon or Guam Doctrine in 1969 and later called the "strategy of realistic deterrence," required that strategic planners shift their attention from Asia to NATO Europe, with a "½ war" glance at the Middle East, especially the security of Israel and the access routes to Persian Gulf oil.[2]

As planners looked to the problem of deterring or resisting aggression in Europe, the most striking issue was the improvement in Soviet and Warsaw Pact forces, especially their conventional forces. The Soviet Union had added five tank divisions to its forces facing NATO since 1965 and

had increased the number of tanks in all of its motorized rifle divisions. Also, the Soviets replaced older T-54 and T-55 tanks with T-62 tanks, and the T-72 began to appear. Better armored personnel carriers and self-propelled artillery also gave Soviet divisions a more offensive capability. Most telling, however, was the gradual redeployment of Soviet and Warsaw Pact units to bases closer to the borders, implying the adoption of a pre-emptive, nonnuclear strategy. Outside the NATO area, Soviet naval and air forces were more modern and far-reaching. In October 1973, Soviet threats to intervene unilaterally in the Arab-Israeli War demonstrated new Soviet assertiveness on the world scene.[3]

To many observers, the U.S. Army was in no condition to challenge this revitalized threat to what was acknowledged as America's first-priority security region, NATO Europe. The draft and personnel turbulence of the Vietnam years had left the Army with morale and discipline problems, a lack of unit cohesion, and a shortage of experienced leaders at all levels. The training base of the Army and its institutional experience in warfare focused entirely on the infantry-intensive combat and counterinsurgency effort of Vietnam. Whatever combat experience the Army had gained in Vietnam seemed likely irrelevant to war in Europe where U.S. forces would decidedly not have the overwhelming advantages in firepower and air power that they had enjoyed in Vietnam. Even the significant innovation of air-mobility had developed in the relative absence of an enemy air defense capability. The Army's combat developments effort (that is, its research into new battlefield technology and doctrine), which had been driven by the Vietnam War, had produced many innovations that were only coincidentally relevant to conventional war in Europe. In short, a decade of war in Vietnam had rendered the U.S. Army an unlikely instrument with which to protect America's European interests.[4]

Compounding the concerns of Army planners was the decreased role of the Active Army in the new strategy and the resultant lowering of the Army's budget. Although the overall defense budget for fiscal year 1973 was an increase over previous fiscal years, it represented a significantly smaller portion of the gross national product and the total federal budget. The bulk of the increase was dedicated to personnel costs, especially for pay and housing, which reflected the shift to an all-volunteer force. Other defense increases were used to improve nuclear deterrent forces, naval forces, strategic mobility forces, the National Guard and Reserve, and military assistance programs.[5] Consequently, in order to maintain the highly ready conventional forces required by the new strategy and to stay within the new budget, the Army had to use its budget resources on its real and immediate combat capability.

A New FM 100—5

In response to the turbulent conditions in the early 1970s, the Army published FM 100—5, *Operations*. This manual's origins can be traced back almost 200 years to Major General Friedrich Wilhelm von Steuben's 1779 *Regulations for the Order and Discipline of the Troops of the United States*

or Blue Book. Unlike the Blue Book and its nineteenth-century successors, FM 100—5 was not a drill manual for infantry formations; it was a single, conceptual expression of how to employ all the Army's various systems in offensive and defensive operations. FM 100—5 also differed from its twentieth-century antecedents, the field service regulations and field manuals that began to appear after 1905, in that it announced dramatic doctrinal change without similar changes in organization.

Some earlier changes to U.S. Army doctrine had been subtle, almost scholastic, impacting perhaps on the teaching at the U.S. Army Command and General Staff College but on little else, as were, for example, the changes that occurred between the 1944 and 1949 editions of FM 100—5. When sweeping doctrinal changes occurred, it was nearly always in tandem with major organizational changes. For example, the 1944 edition of FM 100—5 integrated relevant combat experience and recorded the doctrinal assumptions that undergirded Lieutenant General Lesley J. McNair's massive reorganization of Army tactical units between 1940 and 1943. Likewise, the pentomic organization of the Army between 1956 and 1961 represented major doctrinal change that was never formally incorporated into contemporary editions of FM 100—5.

Because these earlier editions of FM 100—5 were not the agents of change, they shared the quality of anonymous authorship. Not so with the 1976 edition. No officer on active duty in 1976 could fail to identify its author as General William E. DePuy. As the nineteenth-century drill manuals tended to bear their authors' names (Henry W. Halleck, William J. Hardee, Silas Casey, Emory Upton), so too would the 1976 edition be known as the DePuy manual. This was because the DePuy manual was an attempt to change the thinking, not the organization, of the entire United States Army.

FM 100—5 was the "capstone" manual to an entire family of doctrinal manuals that constituted a wholesale replacement of the Army's then-current tactical doctrine. It attempted to present an overarching concept of warfare from which all other manuals dealing with separate parts of the Army would follow. FM 100—5 described "how to fight" or, more specifically, "how the US Army destroys enemy forces and secures or defends geographic objectives." Published in striking, camouflage-patterned covers and thoroughly illustrated with colored charts and realistic depictions of Army units in combat, the new manuals were to effect a break with the past—especially the Vietnam War—and to prepare the Army doctrinally to win its next war, not its last.

To this end, FM 100—5 made several assertions about future combat. According to the manual, the U.S. Army must prepare to fight outnumbered and win and to win the first battle, points that the authors acknowledged were not part of the Army's historical tradition.[6] Also emphasized was that the tank was "the decisive weapon" of ground combat, but that it could not survive on "the modern battlefield" except as part of a "combined arms team" that included all the other branches of the Army and tactical air

The 1976 edition of FM 100—5, *Operations,* was published in a camouflage-patterned cover to strike a contrast with earlier manuals and dramatize the doctrine as a break with the past

forces.[7] FM 100—5 accepted "force ratios" as a primary determinant in battle and specified that successful defense required the defender to have no less than a 1-to-3 ratio to the attacker. Successful attack required a 6-to-1 superiority. The manual stressed that cover (protection from enemy fire), concealment (protection from enemy observation), suppression (disruption of the enemy's fire with one's own fire), and teamwork (cooperation between the branches of the Army and between the Army and Air Force) were essential to victory on the battlefield.

Much of what FM 100—5 said rested on an analysis of weapons systems' capabilities. The chapter that discussed modern weapons stated that weapons of the 1970s were by far more powerful than their predecessors of World War II vintage and the possession of them in abundance by many lesser states meant that a "new lethality" would characterize any battlefield where the U.S. Army might fight. The techniques for employing these systems, as described later in the manual and in other manuals, resulted from a systematic and comparative analysis of U.S. and Soviet weapons and organizations superimposed one on the other. The analysis convinced the manual's authors that the techniques would work when properly employed. Consistent with this focus on weapons systems, FM 100—5 recognized emerging technological capabilities such as remotely controlled drones for collecting intelligence and identifying targets; special sights and goggles expected to give the Army a full night vision capability; and the

soon-to-be-fielded M1 main battle tank, the M2 mechanized infantry combat vehicle, and an advanced attack helicopter. It attempted to present concepts and techniques that could be implemented using equipment currently on hand but that would allow the Army to practice a style of warfare consistent with possession of the new equipment.

FM 100—5's emphasis on armored warfare, Soviet weapons systems, emerging technology, and U.S. numerical inferiority all reflected its deliberate focus on the defense of NATO Europe. The manual even included a chapter each on fighting alongside NATO allies and fighting in cities, both contributed by U.S. Army, Europe. It stated that the defense of NATO Europe was the U.S. Army's most important and most dangerous contingency and that an army prepared to fight Warsaw Pact forces in Europe could probably fight successfully in other areas of the world against other enemies with little modification to its doctrine. FM 100—5 relied heavily on the October 1973 Arab-Israeli War to assert that contingency missions outside NATO were likely to pit the Army against enemies organized, trained, and equipped in the Soviet style in any case.

Because FM 100—5 focused on the defense of NATO Europe as the Army's first-priority mission, it articulated a totally new doctrine for defense. The so-called "active defense," which became a source of much criticism after the manual's publication, attempted to reconcile the political imperative of defending West Germany well forward along the inter-German border with the facts of numerical inferiority and Soviet possession of the initiative. Its features included deploying all forces forward without retaining reserves; fighting aggressively in a "covering force area" forward of the main defensive area to force the enemy to commit his main attack echelons; detecting the enemy's main attack; and reinforcing against it by moving laterally from other sectors of the battlefield where the defender would accept a certain degree of risk. Fighting to retain ground was a special case in the active defense, which focused on fighting the attacker's forces wherever they went on a fluid battlefield. By trading some space for enemy combat power and by laterally reinforcing against the enemy's main attack, the defender hoped to achieve a favorable combat ratio at the point of decision.

In addition to the active defense, the 1976 edition of FM 100—5 introduced the term "Air-Land Battle" for the first time. The chapter titled "Air-Land Battle" only described the joint procedures agreed to by the Air Force and Army for cooperating in areas of mutual interest, such as airspace management, air logistics, aerial reconnaissance, and electronic warfare. The use of this term and the dedication of a chapter to its discussion signaled the Army's strong interest in a new concept of theater warfare that recognized the total interdependency of the Army and Air Force and that sought to describe their activities within the theater in a single, unified battle.

In each of these particulars, the 1976 edition of FM 100—5 was distinctly different from its predecessors. It was a deliberate attempt to change the way the U.S. Army thought about and prepared for war.

The General and the Army, 1941—73

2

Because the doctrine in the 1976 edition of FM 100—5 represented the tactical thinking of General William E. DePuy, the study of its doctrine begins with the man. Born in 1919, commissioned into the Infantry from the Reserve Officers' Training Corps (ROTC) at South Dakota State University in 1941, DePuy landed at Normandy with the 90th Infantry Division on 7 June 1944. He participated in the great battles of the crusade in Europe and ended the war as a 25-year-old battalion commander in 1945. Subsequent service took him to Europe twice more, once as commander of the 2d Battalion, 8th Infantry, 4th Infantry Division, when many of his colleagues were just finishing a war with a wholly different enemy in Korea, and again in the early 1960s as commander of the 30th Infantry. Although DePuy missed the Korean War altogether, he gained experience as a general officer in Vietnam, where he served as the J3 of the Military Assistance Command, Vietnam, and later as commander of the 1st Infantry Division. Service as the special assistant to the Joint Chiefs of Staff for Counter-insurgency and Special Operations and, later, as assistant vice chief of staff of the Army in Washington, D.C., rounded out his preparation for a fourth star and command of the new U.S. Army Training and Doctrine Command (TRADOC) in the summer of 1973.

William E. DePuy

Intelligent, pragmatic, and forceful, DePuy was a leader with more energy than charisma. He described himself as "impatient," as a man "trying to make things happen, usually unsuccessfully, not wanting to be told that things aren't working well." Convinced by his experience in World War II that only a small percentage of combat soldiers actually participated in the fighting, he believed in dominant, decisive leaders and frequent, clear, simple, and direct instructions to keep an organization functioning. In 1969, he told a group of senior cadets at West Point that the three steps of leadership are to decide what is to be done, tell people to do it, and see that they do. If his leadership style was blunt, even tactless, it was unambiguous. He stated his expectations clearly and noted exceptions with "that's *wrong*." He required few of the latter to lose patience with a subordinate.[1]

In 1974, the Army, in trying to fill its ranks without the draft in the wake of an agonizingly unpopular war, made drastic changes in the lifestyle of its soldiers and the leadership style of its sergeants and officers. "Today's Army wants to join you" was the watchword, and the emphasis was on human relations, the rights and material comforts of the individual soldier, and counseling as a component of leadership. Nevertheless, DePuy, in the keynote address to the TRADOC leadership conference at Fort Benning, Georgia, told the leaders of his command, "We are not in this business to be good guys. . . . Nice, warm human relationships are satisfying and fun, but they are not the purpose of an Army. Establishing the most marvelous, warm, sympathetic and informed relationships is unimportant, except in the context of making the team work better." In describing the type of leader who was so preoccupied with accomplishing his mission that he had little time for or interest in his soldiers' personal problems, DePuy said, "I am not saying that is best, but I am saying that is the cake and that the frosting on the cake is to be civilized and perceptive."[2]

Just before retiring, DePuy regretted that he had not taken the time to be a better educator as a general officer, more persuasive and convincing.[3] Persuasiveness, however, implies patience, and he simply was not a man who had much. Impatience (bordering sometimes on intolerance), decisiveness, energy, and keen intellect were hallmarks of DePuy's style and personality and were important to the development of FM 100—5. Having these characteristics meant that DePuy's own ideas and those of like-minded men he trusted would prevail, largely without compromise, over the views of others. The doctrine itself would reflect his assumptions about people and combat leadership. The Army published FM 100—5 in the form and at the time that it did because, during those turbulent times of transition within the Army, an intelligent, forceful, pragmatic, impatient man had and exploited a great deal of institutional power as commanding general of the U.S. Army Training and Doctrine Command.

DePuy in World War II

As it did to most of the men who experienced it, World War II profoundly affected William DePuy. He was like his fellow veterans in that he never forgot the campaign across Europe, referring to it frequently in public and private communication and recalling specific details thirty and forty years afterward. Unlike many other veterans, DePuy neither romanticized it nor had a particularly high opinion of the military prowess of the Army of which he had been a part.[4] Many of his notions about soldiers and leadership came from his wartime experiences, and those experiences were the foundation of all his tactical thinking.

That DePuy had rather unique recollections of the war is in part because he served with the unlucky, sometimes poorly led, 90th Infantry Division for the duration of the war. The 90th had a spotty record. One of the transports carrying it struck a mine off Utah Beach and sank on 7 June 1944. Though there were no casualties, the sinking appeared to have

been an omen of the 90th's fate. Hastily trained, the green troops of the 90th attacked through the beachhead line held by the 82d Airborne Division on 9 June and directly into the bocage country of the Cotentin Peninsula, the infamous hedgerows for which Allied planners had made almost no preparations. German defenses were strong, and the lead battalion recoiled under its first enemy fire. By the end of the day, the division had advanced only about two kilometers, and the 357th Infantry, where DePuy served as a battalion operations officer, alone suffered ninety-nine casualties.

The corps commander, Lieutenant General J. Lawton "Lightning Joe" Collins, whose mission was to cut across the base of the peninsula and isolate German forces in preparation for a drive to Cherbourg, relieved the division commander, Major General Jay W. MacKelvie, and two regimental commanders. Lieutenant General Collins switched the 90th's mission to the supposedly easier one of protecting the northern flank of the corps advance.[5] However, this change did not improve matters. The 90th encountered the relatively fresh German units assembling to the north, while the spearhead of the westward advance moved against weakening resistance. The new division commander, Major General Eugene M. Landrum, seemed unable to improve the division's performance. When Collins' corps reached the Atlantic coast of the Cotentin and reorganized for the drive on Cherbourg, the 90th assumed relatively stationary positions, this time facing south to seal the peninsula. It soon lost a bridge and over 100 men taken prisoner to elements of the German 1050th Grenadier Regiment.[6]

Cherbourg fell to U.S. forces on 27 June, and Collins' VII Corps redeployed south to Carentan, transferring the 90th to VIII Corps control. While the British Second Army battered Caen on the eastern end of the Allied beachhead, General Omar N. Bradley's U.S. First Army in the west pressed south against stiffening German resistance to seize the east-west highway connecting Saint-Lô with the Atlantic coast. The 90th Division fought near Mont Castre, a piece of dominant terrain from which German artillery observers placed accurate fire on the 90th's fitful advance across swampy ground. To support Operation Cobra, the carpet bombardment of the German lines near Saint-Lô and the breakout that followed, the 90th again attacked German-held high ground head-on, this time across the Sèves River. The coordination of engineers, artillery, and tanks with the infantry assault was faulty and resulted in some infantry forces being stranded on the far side of the river where German artillery and machine guns battered them. As a result, more troopers from the 90th surrendered. By the time the 90th joined General George S. Patton's newly organized U.S. Third Army and pulled out of the immediate fighting in early August, Major General Landrum had been relieved, and Patton, Bradley, and Supreme Allied Commander Dwight D. Eisenhower had all expressed concern over the division's poor performance. Most telling was the number of casualties: the division replaced 100 percent of its initial strength in riflemen in two months of fighting.[7]

The 90th Division's fortunes improved under its new commander, Brigadier General Raymond S. McLain, a National Guard officer and banker

from Oklahoma, who assumed command on 30 July 1944. Under the operational control of the XV and later V Corps, the 90th performed well in Third Army's pursuit toward the Seine River. Its defense of Le Bourg St. Leonard on 15 August was key to the destruction wrought on German forces attempting to flee through the famous Falaise Gap. Attached to XX Corps, the 90th participated in Patton's drive across Lorraine and, with Patton, stopped on the banks of the Moselle River near the ancient fortress city of Metz.

From September to late November 1944, when Major General James A. Van Fleet replaced now Major General McLain, the 90th participated in some of the hardest fighting of the European Theater of Operations. German fortifications in and around Metz were extensive, formidable, and situated on ground ideally suited for the defense. Autumn rains swelled the Moselle River and its many tributaries and poured incessantly down on sodden American infantrymen. To make headway, units of the 90th Division resorted to attacks that relied on detailed planning, squad-level execution, infiltration, and bypassing of enemy strongpoints to move through fortified zones and enemy-held towns and industrial sites.[8] DePuy, as regimental

Infantrymen of the 90th Infantry Division pass concrete dragon's teeth of the Siegfried Line in Habscheid, Germany. DePuy's experiences with this division in World War II were the foundation of all his later tactical thinking.

operations officer (S3), applied these principles in taking the town of Maizières-lès-Metz and again as a battalion commander in conducting his portion of the crossing of the Saar River in mid-November.[9] Enemy armored counterattacks on the far side of the Moselle gave DePuy some of his first experiences in antitank warfare.

Once across the Moselle, the 90th advanced to the German frontier and was into the Westwall fortifications near Dillingen, Germany, when it and the rest of Third Army were sent bustling north to wrest the initiative from the Germans at the Battle of the Bulge. Fighting in Luxembourg and into Germany near the Schnee Eifel occupied the rest of January and February 1945. From mid-February to the end of the war in May, the 90th pursued the remnants of the German Army in a mobile, deadly game of fox and hounds that ended on the frontiers of Czechoslovakia.

These eleven months of combat taught William E. DePuy lessons in warfare that lasted his whole life.

One problem the 90th Division had, at least until it became part of Patton's Third Army, was that of attacking directly into German defenses. Whether the enemy was in hedgerows, behind river lines, or on hill masses, the 90th plunged directly ahead and took the casualties. Only when confronted with the fortified defenses around Metz did the division seek an alternative to the head-on assault. The success of such attacks, as the one at Maizières-lès-Metz where squads infiltrated through the enemy lines, seized key positions, and then took out the defenses from the rear, all according to a centralized plan, convinced DePuy of the value of the indirect approach. When in later years he assailed tactical problems that required the attacking force to seize an enemy-held hill directly ("That's *wrong* . . . you want to go around behind it."), he was remembering World War II.[10]

German tactical techniques also influenced DePuy, so much that he integrated some of their ideas into his battalion's procedures. He was especially impressed by their ability to organize terrain for the defense, using its every fold to site their weapons along probable enemy approaches with little regard for a neat, linear pattern. Also, DePuy admired their ability to camouflage and conceal their positions, as well as their ability to integrate combat vehicles with their infantry, either as roving guns in the defense or as direct-fire support platforms in the attack. The Germans also excelled at what DePuy later called "suppression." This was their generation of a superior volume of fire against an enemy position, forcing that enemy to take cover so he could not return fire accurately and thus making him vulnerable to assault.[11]

DePuy admired German suppressive fire techniques because, in contrast to U.S. techniques, the Germans relied more on direct fire from vehicles and machine guns than on indirect fire from mortars and artillery. This meant that a commander who controlled direct-fire weapons had available suppressive fires that were more responsive and accurate. It was not until after the Battle of the Bulge that DePuy adopted a technique similar to the Germans'. His battalion was outrunning its artillery, and to compensate

for the resultant loss of available firepower, he concentrated all the battalion's heavy machine guns in a single company. This company provided a "base of fire" as the rest of the battalion (two rifle companies and a tank platoon) maneuvered to attack the enemy in the flank or rear. Sometimes, tank destroyers and mortars augmented the fires of the base company.[12]

If DePuy was impressed with the technique of direct-fire suppression, he was anything but heedless to the capabilities of artillery and aircraft. Having fought on the southern shoulder of the Falaise Gap, he had seen what artillery fire and aerial bombing could do to a concentrated target. He was convinced that they provided the firepower that was the margin of superiority in overall combat power that the Americans enjoyed. Indeed, he once described his job as an infantry commander in Europe as moving the artillery's forward observers across France and Germany.[13]

Finally, DePuy carried out of World War II a clear impression of the potential of armored forces to conduct rapid operations across varied terrain while employing both fire and maneuver. Pursuing the remnants of the German Army across the interior of Germany in the spring of 1945, working closely with the 4th Armored Division, he participated in some of the most fluid operations of the war. The key to success that lingered in DePuy's memory was the concentration of fire against the enemy to suppress him while other elements maneuvered to take him in the flank or rear.[14]

Not only did World War II give DePuy seminal experience in the techniques and tactics of the battlefield, but it also enabled him to develop or confirm his notions of combat leadership. DePuy was not impressed with the initiative and aggressiveness of American soldiers. He perceived them as inherently reluctant to take risks and, because of inadequate training, unable to take charge in the absence of orders from a superior. On the other hand, he believed that they were willing to carry out specific instructions and orders and that only specific, personal orders could overcome their natural fear in combat. He thus admired German leaders, whom he described as constantly "chattering" during battle, noncommissioned officers shouting to soldiers, junior officers to noncommissioned officers, soldiers to each other.[15]

An apparent contradiction exists between DePuy's leadership style and the individual tactics he espoused: he believed that tactics such as infiltration and the indirect approach depend on aggressive subordinate leaders capable of independent action. DePuy reconciled this contradiction by what he called "centralized idea, decentralized execution." He made thorough, detailed plans whenever possible, specifying missions down to squad level and making sure his soldiers understood. He then released them to execute their missions, which he and his staff officers supervised. He credited his regiment's success in taking Maizières-lès-Metz and in crossing the Saar River in November 1944 to this system. He emerged from the war convinced that self-starters were rare in the U.S. Army but that detailed orders and thorough supervision by commanders could overcome this deficiency.[16]

The Influence of Hamilton H. Howze

Eight years after World War II, DePuy, still a lieutenant colonel, returned to Germany to command the 2d Battalion, 8th Infantry, 4th Infantry Division. Again, he organized and trained his companies so that one provided a base of fire while the others maneuvered to close with the enemy's flank or rear. While observing the training of the 2d Armored Division, he discovered in the work of the assistant division commander, Brigadier General Hamilton H. Howze, a concept for battlefield movement that crystallized his thinking about suppressive fires and maneuver.

Recalling his own World War II experiences, Howze concerned himself with the movement of tank units across the battlefield. He recognized that suppressive fire was the best way to neutralize enemy fires so that decisive maneuver could take place. The difficulty was that a tank unit on the move could not return a high volume of accurate fire instantly, especially if engaged from a well-concealed position. An enemy could easily destroy two or more tanks before the rest of the unit had time to seek cover, identify the attacker, and begin to return fire.

To resolve this problem, Howze coined the term "overwatch," a concept by which tanks assaulted only under the "overwatching" direct fire of other tanks, which were "to establish 'mastery-by-fire' of the area of assault." Ideally, they did so from stationary positions. Howze's battle drill for infantry squads and tank and armored infantry platoons also used the term

Brigadier General
(later General)
Hamilton H. Howze

"overwatch" when describing how these units moved to contact or reacted to contact with the enemy. In any case, the point was to ensure the immediate delivery of suppressive fire against an enemy so that the element engaged by that enemy could maneuver.[17]

DePuy immediately saw that his idea of a base-of-fire company and one or more maneuver companies was consistent with Howze's overwatch technique but that overwatch was more flexible and allowed for fluidity of movement. He also believed that overwatch could apply to infantry units at any level with at least two subordinate elements. Soon, all the 2d Battalion, 8th Infantry, was practicing overwatch. True to form, Battalion Commander DePuy personally drilled and tested each squad again and again.[18]

By the time DePuy returned again to Germany in 1961, the Army had changed its doctrine, organization, and equipment. In preparing for atomic warfare, divisions were pentomic, that is, organized into five battle groups instead of three regiments, with each battle group comprised of five maneuver companies. One or more of these battle groups might be put under the command of a single officer as a task force. With this new organization came increased mobility, as infantrymen in M59 armored tracked vehicles were able to move about the battlefield at nearly the same speed as tanks. Even with the reduced size of the division overall, it had increased mobility and more maneuver elements, as well as the ability to disperse and mass rapidly on the atomic battlefield.[19]

DePuy took command of the 30th Infantry, a battle group of the 3d Infantry Division. Initially, he simultaneously commanded one of the division's task forces, which was comprised of his own battle group plus the 38th Infantry and other tank and cavalry units assigned to him by the division. Again, he drilled the whole force in overwatch, a technique more appropriate to the completely mechanized force he now commanded than his base-of-fire companies from World War II days. He also practiced what he had long observed, that armored operations are highly mobile and require new command and control procedures in order to coordinate and concentrate all arms in a responsive manner. Units must be assigned destinations and missions rather than complete operations orders, and they must rely on battle drill to carry them through enemy contact. In addition, they must be completely responsive to changes in their orders and be able to mobilize with almost no forewarning. DePuy gloried in training and commanding his task force and battle groups and referred to the experience as "the practical culmination of my experience as an infantry unit commander."[20]

In only a few years, DePuy again became an infantry unit commander, but in a place and an operational environment far removed from Central Europe: the Republic of Vietnam. Thus far, his experience in conventional command had been consistent: infantry units combined with armor and facing a similarly organized enemy in Europe. Significantly, DePuy did not participate in the Korean War, nor did he like what he saw coming out of that war: an overreliance on fortification and little regard for camouflage and the proper use of terrain. Like the war in which he was about to

participate, he saw Korea as a distraction from the Army's first-priority mission, mechanized combat in Europe.[21]

Vietnam and the Big Red One

William DePuy spent three years in the Republic of Vietnam, two (1964—66) as J3 (operations officer) at the theater headquarters, Military Assistance Command, Vietnam, and a year (1966—67) as commanding general of the 1st Infantry Division. In this latter assignment, he showed that he could transfer the ideas about tactics that he had nurtured for twenty-five years to a totally new environment.

The 1st Infantry Division consisted of nine infantry battalions, two of which were mechanized; artillery; and an armored cavalry squadron. In addition, the division could call on several battalions of assault helicopters to ferry dismounted infantry onto the battlefield quickly. Its area of operations included the jungled, rice-paddied, and sparsely populated terrain north of Saigon to the Cambodian border along Highway 13 and west to Tay Ninh. Its enemy was the reinforced 9th Vietcong Division, consisting

Big Red One troops in action in Vietnam. Although DePuy played an important role in the Vietnam War, he perceived the war as an aberration in the historical trend of warfare.

of one regular North Vietnamese and three Vietcong regiments. DePuy's mission involved a two-dimensional effort for the 1st Infantry Division: to protect the local populace and encourage support for the government while collecting intelligence about Vietcong units in its area and to seek out Vietcong units and destroy them to prevent them from entering the populated areas near Saigon.

To perform this latter mission, DePuy used as small a force as possible to gain contact with the enemy, while he held a reserve force ready to prevent the enemy's withdrawal. The enemy then could be smashed with artillery fire, tactical air strikes, and only if necessary, assault by infantry forces. The key, of course, was accurate intelligence and a division capable of instant response in all of its varying assets. All this was consistent in DePuy's mind with his earlier experiences as a commander in Germany.[22]

The notion of making contact with small units while holding larger ones in immediate reserve was essentially an extension of the overwatch technique, which he applied to an operational environment whose size, vegetation, and nature of the enemy disallowed overwatch techniques in the sense of actually observing the enemy's initial fire. Radio communication, artillery fires, and rapid mobility by helicopter or armored personnel carrier compensated for the handicap of not being able to physically overwatch the many aerially inserted patrols that were searching for the enemy. To exploit this mobility advantage, units had to be capable of responding instantly to a destination, time, and objective, relying on battle drill to carry them through the initial fight. This is just how DePuy had trained his companies in the 30th Infantry in Germany. Once the operation was underway, the brigade and division headquarters had to coordinate the use of airspace so helicopters, artillery, and tactical fighters could all perform their missions without colliding.[23]

If speed, agility, the combining of arms on the battlefield, and a continued reliance on the relationship between suppressive fires and maneuver were all positive military experiences for DePuy in Vietnam, there were other operational practices of the war he did not think were of much use. He believed that an entire generation of American officers had learned to fight without regard for the military value of terrain. Due to thick vegetation, terrain did not offer observation and so it became irrelevant. Helicopter-borne commanders lost their respect for the ability of terrain to hamper the mobility of units on the ground. Further, DePuy believed that an overreliance on the overwhelming superiority in firepower, especially from artillery, helicopters, and Air Force fighter-bombers, caused the Americans to develop bad habits. For instance, commanders disregarded camouflage and noise and light discipline in their fire bases, defensive perimeters, and semipermanent installations and did not consider it important to site weapons properly, especially small arms. "None of those," DePuy said in 1974 when referring to Vietnamese-style defensive positions, "would survive for two seconds on the modern battlefield."[24]

A Tactical Style

For the six years between his return from Vietnam in 1967 and his assumption of command of TRADOC in 1973, DePuy served in Washington, D.C. There, the Army's macrolevel problems demanded his attention far more than the problems of the battlefield. When DePuy left the 1st Infantry Division to take his new post in Washington, his notions about how the Army should fight and how it should be trained were well established.

To William DePuy, the essence of battle was the physical destruction of the opposing force, normally by gunfire and other munitions. To destroy one's enemy, it was best to attack him where and when he was most vulnerable: on a flank, in the rear, by surprise. To do this, a unit had to move quickly while protecting itself from enemy countermeasures, especially enemy fire. Fast maneuver by tank or helicopter offered some protection, but against a sophisticated and conventionally armed enemy, the best protection would come from the proper use of available cover and concealment and suppression of enemy fires with one's own.

To conduct these types of operations required intensive training at the low levels in the basics (such as field craft, weapons siting, and movement techniques); at intermediate levels, an attitude of immediate responsiveness to mission-type orders; and at higher levels, an ability, built on the assumptions of that responsiveness, to integrate multiple assets in a closely coordinated, violently executed operation. DePuy was skeptical of the relevance of the Korean and Vietnam experiences, except as they reinforced his ideas. He favored armored, combined arms operations and admired the German methods of warfare. All DePuy's ideas were grounded in his experiences in World War II. They were the ideas around which he would try to rally the entire United States Army.[25]

Operation Steadfast—Reorganizing CONARC

During DePuy's tenure in Washington, the Army underwent a major reorganization of its major U.S.-based administrative headquarters. The U.S. Continental Army Command (CONARC) was a headquarters activated in 1962 to oversee all Army activities in the continental United States. It exercised its responsibilities through four, and later three, subordinate continental army headquarters, each with a regional span of responsibility. The CONARC commander was responsible, through the chief of staff of the Army to the secretary of the Army, for activities as diverse as the combat readiness of units of the Active Army, National Guard, and Army Reserve; the operation of the Army's training bases and schools; and the supervision of the Army ROTC program. Army planners in the early 1970s saw this sprawling span of control as a likely place to streamline the headquarters functions and thus reduce costs.

Key among those planners was Lieutenant General William E. DePuy, assistant vice chief of staff of the Army. Dissatisfied with CONARC's efficiency in recalling and deactivating units from Vietnam as the Army

reduced its strength from twenty-eight to thirteen combat divisions, DePuy, together with General Bruce Palmer Jr., vice chief of staff, was an early advocate of CONARC's reorganization. Given the job of making recommendations for such a reorganization in the winter of 1971—72, DePuy, in a manner characteristic of his style as a general officer, assigned two lieutenant colonels to work full time on the task of developing a plan that eventually became the guidance for the actual reorganization. Their concept, which took a month to develop, was approved at every level of command from General DePuy through Secretary of Defense Melvin R. Laird in a single, bustling week in March 1972. Operation Steadfast, as the reorganization was code-named, divided CONARC into two major headquarters, one of which, the U.S. Army Training and Doctrine Command, was the institutional base from which DePuy, as its first commander, would prescribe combat doctrine for the Army.[26]

TRADOC was to oversee approximately half of CONARC's former responsibilities, those concerning individual training. Consequently, all the Army schools and training centers (except the U.S. Military Academy at West Point, New York, and the U.S. Army War College at Carlisle Barracks, Pennsylvania) would be under TRADOC jurisdiction. A separate new headquarters, the U.S. Army Forces Command (FORSCOM), would assume control over U.S.-based operational units.

Because training must be conducted according to some prescribed doctrine and because training centers and schools, in their military students and faculty, are the repositories of broad and recent experience, TRADOC also assumed responsibility for publishing doctrine as a logical partner to its training mission. To support this doctrinal development mission, TRADOC further assumed the functions of the U.S. Army Combat Developments Command, a separate command from CONARC whose field agencies had always been collocated with, but bureaucratically separated from, the Army schools. TRADOC thus consolidated under a single commander three logically interrelated functions: research into new techniques of land warfare, to include equipment capabilities; development of doctrine and organization; and training of soldiers, noncommissioned officers, and officers according to established doctrine so that they would be prepared for their assignments in the field.[27]

Toward a New Doctrine

It would be too much to say that William DePuy intended from his return from Vietnam to reshape the Army's thinking about combat. He did not, nor did he have reason to, suspect that he might someday be in a position to do so.[28] However, by the time he arrived in Washington, his own tactical style and notions about combat were established. They rested solidly on his World War II experience and were only slightly modified by his experience in Vietnam, a war he considered a special case. Likewise, his notions about soldiers and combat leadership were in place.

During his tenure in Washington, he developed a vigorous bureaucratic style that included isolating bright, relatively junior officers from other chores to brainstorm specific problems and come up with comprehensive conceptual recommendations. These could quickly gain the approval of superiors and, with it, the authority to guide detailed planning, thus avoiding the tedious and diluting process of gaining approval of a detailed plan from every affected staff agency before sending it to a higher authority.

DePuy's time in Washington further sensitized him to specific Army problems, namely, the Army's role in the new strategy of realistic deterrence, the management of the Army's budget to produce more real fighting power with fewer resources, the perceived inefficiencies of CONARC, and the necessity to rationalize combat developments with doctrine and training. Each of these issues influenced him as he played a key role in the reorganization of CONARC and the design of TRADOC. When DePuy assumed command of TRADOC on 1 July 1973, the tactical ideas, management style, and institutional tools for changing Army doctrine had all come together.

Assessing the October War, 1973—74

In July 1973, when General DePuy established his new headquarters inside the long-dormant historic seacoast fortress at Fort Monroe, Virginia, he was not yet convinced of the Army's desperate need to overhaul its tactical doctrine. His priority missions, as he saw them, were to upgrade the Army's training programs and to integrate into TRADOC the combat developments functions of the old U.S. Army Combat Developments Command (USACDC). These formidable administrative tasks competed for the general's attention with a host of other concerns, some inherent in establishing TRADOC and some directed by higher authorities in Washington. However, the Arab-Israeli War of October 1973 caused a reordering of TRADOC's priorities. It powerfully demonstrated to DePuy that there was no time to lose in addressing doctrinal issues first.

The New TRADOC Commander

DePuy's guidance from his superiors in Washington—namely, Chief of Staff of the Army Creighton W. Abrams and Secretary of the Army Howard H. Callaway—included accomplishing more tasks than organizing TRADOC. The secretary of the Army was concerned more with the personnel aspects of the new volunteer force than with organizing and preparing it for combat. In February 1974, Callaway instructed DePuy to pay careful attention to recruiting, retention rates, quality of personnel, management and training practices, soldier life-style, and the public image of the Army.[1] General Abrams had talked to General DePuy about doctrine development prior to the activation of TRADOC, but Abrams' main concern was to increase the number of Active Army divisions from thirteen to sixteen while staying within the allocated manpower ceiling of 785,000 soldiers. To do this, Abrams depended on his major subordinate commanders to "rid ourselves—ruthlessly if necessary—of every project or activity that does not contribute directly to the attainment of the required force."[2]

General DePuy was therefore concerned with operating his new command under sound management principles.[3] For the first year as TRADOC's commander, DePuy concentrated on reducing staffs, increasing efficiency, and operating with less money. As he prepared for his first commander's conference in Washington in the fall of 1973, he wrote to General Abrams

about "the matters which are uppermost in my mind." Alongside training and combat developments issues were concerns about budget reductions (especially in light of soaring fuel costs), excess personnel, and reductions in the civilian work force. Nowhere did he express a concern for the Army's doctrine.[4] As much as a year later, he reported to the Department of the Army that, by doing more with less, his command was contributing to the Army's goal of increasing to a sixteen-division force. In his report, DePuy stated he had saved money by reducing the length of officer courses at the various schools, giving recruits their basic and advanced training at the same post to eliminate relocation costs, and fielding a variety of training aids so that more intensive specialized training could take place at the soldier's unit.[5]

Given these conditions, General DePuy might have lost sight of what TRADOC was supposed to do for the Army as he became enmeshed in day-to-day administrative and financial operations. However, such was not the case. He had a clear idea of TRADOC's overall relationship to the Army and of the Army's role in the security of the United States. That strategic perspective drove his innovations in training first, and ultimately in doctrine.

Strategic Realities and Training

General DePuy did not see the reduction in the Army's size and the shift to an all-volunteer force as a natural consequence of the Vietnam withdrawal. Instead, he saw it as a reflection of a change in U.S. strategy. The United States was not anticipating or preparing for a war on the scale of World War II. If war came, it would likely be unexpected, sudden, localized, and "turned off by the world politicians as quickly as possible."[6] Except in Europe, U.S. involvement would be limited to a force of two or three divisions, first because that would be all the United States could spare and second because combat would likely not last long enough to warrant a large force. The enemy, even if a Third World nation, would likely field sophisticated, well-armed, conventional forces. Therefore, if the United States were to win a limited war, the Army would have to be ready to deploy instantly and be qualitatively far superior to any potential aggressor, including especially the enlarged and recently modernized Warsaw Pact forces.

As DePuy looked at the Army's training establishment, for which he now had responsibility, he saw an institution that was still planning for a mass mobilization similar to that of World War II. He did not see an institution that was attuned to the new strategy or adequate to the current needs.[7] DePuy recalled from his own training in the 1940s that, because of the rapid expansion of the Army, the necessity to deploy troops quickly, and U.S. superiority in manpower, soldiers received the minimum essential training before they joined their units and went overseas. As a result, units often performed much as the 90th Division did before it became experienced. Given enough soldiers, this was a politically acceptable price to pay at the time. This World War II training experience set the mold in which postwar training was cast. While the Korean and Vietnam Wars did not require mobilization on the scale of World War II, the training experience for soldiers

in both conflicts was much the same as for their World War II elders: large numbers of conscripts being hustled through a series of exercises in which minimum competence was the goal. Such training undoubtedly accomplished important socialization but not much military skill.

Another reason the World War II type of training was inadequate for the 1970s was its assumption that war would bring mobilization and a vastly expanded Army. To man this expanded Army, officers would be promoted at an accelerated rate. To allow for this, their training was tailored to focus on problems one or two echlons above their current level. In short, the captains of the small peacetime Army would be the lieutenant colonels and colonels of an expanded wartime Army.

Such training policies, DePuy believed, did not meet the changed circumstances of the Army. To support a small, volunteer force that had to be ready to deploy overseas instantly and fight against superior numbers, the training establishment would have to produce soldiers and officers who were thoroughly proficient in the skills required of them immediately after graduation. This meant better (but, for budgetary reasons, not always longer) and more thorough training focused on the officer's current grade.[8] Consequently, DePuy directed that the schools shift the focus of their curricula in order to prepare officers for their immediate assignment after schooling. The branch schools should train lieutenants to be platoon leaders and captains to be company commanders, and they should not prepare either for duties at a higher level in an expanded Army. DePuy also directed his deputy chief of staff for training, Brigadier General Paul F. Gorman, to rewrite the Army's training literature to make it "readable and current," starting with those manuals most important to combat operations, the ones used to teach the Army "how we fight."[9]

Fiscal Realities and Weapons

If the changed strategic circumstances of the United States required the Army to develop a new training establishment, the Army also needed new fiscal procedures for developing equipment and weapons. In the same fiscal year (1971—72) in which General DePuy had helped plan the Steadfast reorganization of the Army, he witnessed the termination of two major weapons procurement programs, one for the Cheyenne advanced attack helicopter and the other for the MBT70 main battle tank. Although Army leaders saw both weapons systems as critical to the Army's long overdue modernization program, they were unable to convince the Department of Defense and Congress of a need for these weapons commensurate with their costs. While the Army's procurement agency, the U.S. Army Materiel Command, began solving the problem of cost overruns by improving its contracting procedures, General DePuy hoped to help the Army express its materiel needs more persuasively by integrating the combat developments functions into TRADOC.

Prior to the Steadfast reorganization, the U.S. Army Combat Developments Command developed Army doctrine, organization, and requirements for specific pieces of equipment. It then passed these requirements on to

the Army Materiel Command, which in turn designed, developed, and procured the needed item.[10] In order to capitalize on the expertise needed to develop doctrine, organization, and equipment requirements, USACDC field agencies had always been collocated with the various branch schools. This arrangement allowed combat developers and faculty and students to work together in articulating the Army's doctrinal and materiel needs. However, since the USACDC agencies and schools were under different commanders, developing a close relationship often depended on local circumstances and frequently was ineffective.

DePuy perceived that no relationship existed between the schools and the combat developers. Consequently, USACDC could not develop doctrine, organization, and equipment needs because civilian contractors and the Army Materiel Command dominated the equipment development process. Doctrine and organization were incompatible with the equipment being developed. As a result, the Army invested in impressive equipment without thoroughly considering whether such equipment was compatible with equipment already on hand or being developed or with the Army's likely use of such equipment on the battlefield. This gap between the development of doctrine on the one hand and equipment specifications on the other was "big enough to drive a truck through."[11] It was the major problem behind the Army's procurement problems and one that TRADOC was uniquely competent to solve. According to DePuy, "we teach Lieutenants, Captains, Lieutenant Colonels, and Majors how to fight . . . the fact that we teach it means we believe it. If we teach it and don't believe it, we're all frauds. If we teach it and we believe it, then we must buy the weapons that make it work and write the manuals that say how to use the weapons that make it work."[12] By combining combat developments with the schools under the same command, the Army hoped to shift the emphasis in materiel development from the scientists, engineers, and contractors to the fighters and, in the process, make a more persuasive case for its modernization needs.

As commander of TRADOC, General DePuy developed an organization that would integrate the development of doctrine and materiel. All the Army's schools came under three integrating centers that served as intermediate coordinators between Headquarters, TRADOC, and the schools themselves. These centers had functional areas of responsiblity. The Administration and Finance Center at Fort Benjamin Harrison, Indiana, was to oversee Army training in administration and finance; the Logistics Center at Fort Lee, Virginia, training in supply, transportation, ordnance, and related fields; and the Combined Arms Center (CAC) at Fort Leavenworth, Kansas, the training in the combat branches of Infantry, Armor, Artillery, Air Defense, Aviation, and Engineers. CAC was to train the Army's middle-grade officers at the U.S. Army Command and General Staff College (USACGSC), conduct combat developments research at a new facility called the Combined Arms Combat Developments Activity (CACDA), and write the doctrinal manuals that dealt with combined arms operations.[13]

What General DePuy wanted Fort Leavenworth to do in combat developments was to bring order to what he saw as chaos. He perceived all combat

developments and materiel acquisition actions as necessarily starting with a concept, an idea of how the Army wanted to do something. The concept then had to be applied to a scenario that described specific conditions of terrain, weather, and enemy activity so that adjustments to the concept, based on current organizational and equipment constraints, could be made. Then, the Army could clearly articulate the improvement in its capabilities that a new piece of materiel would provide while also demonstrating that such hardware would remain compatible with other Army systems and reliable given the circumstances of its employment. To gain such power of persuasion, the Army would have to speak with one voice about what it needed. Therefore, the concepts would have to enjoy consensus throughout the Army. The scenarios used to evaluate them would have to be limited in number, be based on "real-world" Army missions, and include contributions to the Army's mission in a given theater by other services and allies, including especially the Tactical Air Command of the Air Force.[14] Depuy saw the production of these scenarios as a major task for CACDA and Fort Leavenworth's new commander, Major General John H. Cushman.

General DePuy's concerns in the summer and fall of 1973 had not been to rewrite the doctrine of the U.S. Army. He was concerned first and foremost with getting his new organization off to a good start with efficient administration and financial management. He saw as his first-priority missions the revitalization of the Army's training establishment and the integration of the combat developments function into the TRADOC structure.

However, his approach to both of these missions led directly to the question of doctrine. Changing the school curricula to ensure thorough preparation of the officer students for follow-on assignments begged the question of what those officers must know in those assignments. In rewriting the "how to fight" training literature, Brigadier General Gorman would have to decide how one should fight and what training a soldier should therefore receive. Grounding the development of equipment in commonly accepted concepts and scenarios required that one describe those concepts and scenarios. From these three separate directions, TRADOC asked the fundamental question of American military doctrine: how does the U.S. Army fight? Had no event as dramatic as the Arab-Israeli War of October 1973 happened to accelerate the process of updating doctrine, DePuy's initiatives in training and combat developments would have eventually led to an examination and updating of the Army's doctrine anyway. As it was, that war burst on the consciousness of Army planners and captured their attention as quickly as it did world headlines. The war was the catalyst that brought DePuy's training and combat developments initiatives to reaction as new doctrine.

Lessons of the October War

On 6 October 1973, the Arab-Israeli War erupted with simultaneous Egyptian and Syrian attacks on Israel. Within the first day, Egyptian armies had forced a crossing of the Suez Canal, punctured the renowned Bar-Lev Line, established themselves on the eastern bank, and repelled successive

Israeli armored counterattacks. Meanwhile, four Syrian divisions broke into Israeli defenses on the Golan Heights and pressed hard for the Jordan River. In the three weeks of fighting that followed, Israeli brigades and Soviet-modeled Arab divisions swirled in a danse macabre rivaled only by the fiercest battles of World War II and punctuated by the latest in sophisticated weaponry, especially long-range antitank guided missiles (ATGMs) and integrated air defense systems.[15]

When the fighting ended, total tank and artillery losses for both sides together exceeded the entire tank and artillery inventory of U.S. Army, Europe. Captured Arab equipment, supplied by the Soviets, showed that the Soviets were well ahead of the United States in combat vehicle technology.[16] If evidence was needed that future war might contrast sharply with the decade-long, painstaking experience of the U.S. Army in the rice paddies and jungles of Vietnam, here it was for all to see. TRADOC gained not only a laboratory experiment in conventional warfare to provide analytical data but, more important, a specter of future war to stimulate the process leading to doctrinal reform.

Shortly after the October War, Army Chief of Staff Creighton W. Abrams charged TRADOC to extract the lessons of the war. TRADOC in turn tasked CAC to lead a Special Readiness Study Group composed of personnel from CAC, the Logistics Center, and representatives from other selected Army schools and centers. This group, led by Brigadier General Morris J. Brady, assistant deputy commander of CACDA, visited the Middle East and culled available intelligence and observer reports and, in July 1974, produced a detailed report on 162 specific issues of importance to the Army.[17]

Consistent with its charge, the Brady team attempted to use the events of the October War "as a means of raising issues regarding the U.S. Army's mid-intensity war-fighting capabilities" more than to conduct a definitive analysis of what happened, although that was also desirable. The idea was to identify specific operational problems and submit each problem to an agency that could assess its probable effect on the Army and that could recommend improvements to overcome the problem on a future battlefield. The scope and exhaustive detail of the Brady Study, as well as the process of submitting each issue to an action agency for further coordinated analysis, meant that any substantive Army response to the October War would take a long time.[18]

This process did not appeal to General DePuy. Fearing that the immediate impact of the Brady Study would be lost by its bulk and the diffusion of its recommendations throughout the Army bureaucracy, DePuy drew his own conclusions from the report and submitted them directly to General Abrams.[19] These conclusions, more than the details of the Brady Study, formed the basis of TRADOC's official lessons learned and, in turn, drove TRADOC doctrinal initiatives over the next two and one-half years.

General DePuy, as well as many other observers, saw in the October War indications that future conventional warfare would be significantly

different, if not altogether revolutionary, from previous American war experiences. Most impressive to DePuy were the staggering losses of tanks, vehicles, guns, and aircraft, manifestations of what he called the "new lethality" of the battlefield, which resulted from a proliferation of accurate, long-range, deadly weapons such as improved tank cannon and fire control instruments, ATGMs, and surface-to-air missiles.[20] DePuy deduced from this evidence that a critical issue on future battlefields would be how best to protect U.S. forces from this lethality while maximizing the potential of the new weapons to inflict casualties on the enemy. DePuy was impressed that Third World nations like Egypt and Syria, with Soviet assistance, could field and fight large, highly equipped forces with relative proficiency. This meant that, if U.S. forces were to fight in the Middle East or elsewhere, the Army would have to be prepared, as in Europe, to fight large numbers of well-equipped enemy forces from the first day of hostilities.[21] Assuming that involved governments would attempt (as in the October War) to bring any such clash under control before it ignited into a world or nuclear war or that the rapid consumption rates of battle would disallow prolonged fighting, the Army would have to win the first engagements of such a war so that the settlement would be favorable to U.S. interests.

To do these things, DePuy believed that U.S. forces would have to concentrate on the battlefield against the enemy's main force and defeat it quickly. To do this at the right time and place, the Army would require a superior intelligence collection and analysis system in order to gain knowledge of the enemy's disposition of forces. Also, field commanders would have to know the enemy's situation beyond the front lines, to include his successive echelons, artillery, support troops, headquarters, and possible courses of action.

In addition to the important new concepts that surfaced as a result of the October War, many new operational issues emerged that the Army needed to address. Arab air defenses consisted of radar-controlled guns and missiles of varying ranges arrayed in a belt from which a protective umbrella of antiaircraft fire covered the advancing ground troops. In addition, antiaircraft guns mounted on armored tracked vehicles accompanied the forwardmost troops, which had successfully blunted the Israeli Air Force. Not until Israeli ground forces had attacked and destroyed enough of the Arab air defense sites to create gaps in the umbrella did the Israelis receive adequate air support. DePuy worried that the U.S. Army lacked a similar air defense capability and also that neither the U.S. Army nor the U.S. Air Force was prepared for a battle in which the Army could not get immediate air support and the Air Force could not operate with impunity over the battlefield. DePuy recognized that the success of the ground forces often depended on close air support and air interdiction, which in turn required a joint effort by ground and air commanders against enemy air defenses, a problem he saw as "one of the most important . . . facing the ground commander [and requiring] close and intimate relations with the Air Force in training, operational procedures, planning and in weapon systems acquisition. . . ."[22]

The problem posed by Arab air defense had a parallel on the ground in the ATGM. Egyptian infantry assaulting across the Suez Canal anticipated immediate counterattacks by Israeli tanks, potentially disastrous in the open terrain of the Sinai unless the Egyptians could defend themselves until bridges could be built and their own tanks brought across. Their solution to this problem was to form special tank-killing teams of infantry armed with Soviet-made Sagger antitank guided missiles, mines, and handheld rockets. The teams crossed the canal in the first assault waves, moved quickly to the far side of the first low ridgeline paralleling the canal, dug in, and attempted to halt the Israeli tanks. Mortar and artillery fire and, where possible, tanks from the Egyptian side of the canal provided fire support.

Piecemeal attacks by Israeli tank companies and battalions that had planned only to fight other tanks were stopped cold. The small parties of well-camouflaged Egyptian infantry scattered among the rocks and depressions of the desert engaged the Israeli tanks at ranges out to 2,000 meters. Trained to move together at top speed along the most suitable avenues, the Israeli tanks provided excellent targets for Egyptian missiles and, later, tank fire. The Israeli tankers could not see their opponents and did not have available the accompanying infantry, artillery support, or high-explosive tank ammunition necessary to fight them. Israeli air support was ineffective since aircraft could not get through the umbrella of Egyptian antiaircraft fire. Not until the Israelis used the cover of terrain and accompanied their tank formations with their own infantry and artillery were they able to breach the Egyptian defenses and regain the initiative. While DePuy was guarded in his assessment of the Egyptian use of the ATGM, he recognized that the Egyptian infantry's greatly enhanced ability to destroy tanks forced the Israelis to rely on combined arms to achieve victory, a point he considered a major lesson of the war.[23]

DePuy believed that, to assist the movement of the tanks best, infantry forces would need equivalent mobility and armored protection so that they could move with and fight alongside the tanks using automatic small-arms fire to suppress enemy antitank-capable infantry such as that encountered by the Israelis. If the enemy infantry could not be suppressed, the infantrymen's task was to leave their vehicles only long enough to dislodge the enemy by direct assault. This method represented more direct infantry participation in the tank battle than was the case in the U.S. Army.

Another important observation that General DePuy recognized from the October War was the apparent degree to which Soviet forces were prepared for chemical and nuclear warfare. As evidenced by the design of Soviet combat vehicles that the Israelis captured from the Arabs, vehicle filtration systems (which allowed the crew to fight their vehicle in a contaminated area by closing hatches only and not donning encumbering protective masks) and sophisticated decontamination kits affixed to each vehicle indicated that the Soviets were preparing for (and perhaps anticipating) chemical and nuclear operations.[24] The captured equipment also clearly showed that, in

such operations, Soviet forces would have a decided advantage over U.S. forces.

If the October 1973 Arab-Israeli War presented a type of modern conventional warfare for which the U.S. Army would be unprepared, it also confirmed some of the notions about combat that General DePuy had nurtured for years. The war's dramatic events might compel the Army to move more vigorously (indeed, DePuy would use it for just that purpose), but whatever tactical lessons that might emerge would have to meet the approval of the TRADOC commander before they became Army doctrine. To him, the operations in the Sinai and on the Golan were more continuity than change.

Foremost among DePuy's notions about conventional combat was the importance of armor. While the combination of arms was now essential, to DePuy tanks remained the decisive elements in ground combat. Their inherent offensive mobility, firepower, and heavy armored protection meant that they would be the key weapons with which to penetrate the enemy's defenses and disrupt the integrity of his forces by destroying headquarters, communications, and stores in his rear. Tanks would not be able to move on the modern battlefield without closely coordinated action by infantry and artillery, but their job would clearly be to assist the movement of the tanks.[25]

To survive amid the new lethality of the future battlefield, DePuy insisted that armored and mechanized units would have to adopt new techniques of movement. Their commanders would have to abandon all thought of arranging their vehicles in geometric patterns such as the "Y," "V," and "wedge" (then current) and, instead, have them flow across the ground in the configuration that would best exploit the available cover and concealment of terrain. To maintain their rapid movement, armored units would have to be prepared to suppress the enemy, that is, to return heavy fire immediately to destroy him at best and at least to disrupt his fire. Ideally, suppression would be prearranged with tank and mechanized infantry units overwatching the forwardmost moving elements, either from stationary covered and concealed positions or from units also on the move but outside any of the kill zones the lead elements might encounter. Suppression should also be provided by artillery that could reach beyond the range of friendly direct-fire weapons to strike especially at enemy ATGMs. To do these things effectively against an enemy with comparable equipment in equal or superior numbers meant that the U.S. Army would have to field a force superior—as DePuy believed the Israelis had been—in skill, leadership, discipline, motivation, and courage. All he believed could be produced by intensive training.[26]

Above company level, the crucial quality of combat commanders was the ability to concentrate forces at the right time and place. Therefore, all echelons required superior mobility and flexibility and positive control of subordinate units. To DePuy, the right times and places were those that took advantage of enemy weaknesses and thus forced the enemy to fight the battle according to one's own concept and not the enemy's.[27]

Although the ideas about the lessons of the October War appeared in various reports to DePuy's superiors and the Army at large, each had its roots firmly in his earlier experiences. He was inclined by his service in World War II and in Europe during the 1950s and 1960s to accept the primacy of the tank on any battlefield where the terrain allowed its employment. He discounted contrary evidence from Korea and Vietnam because he saw those infantry-intensive wars as aberrations from the historical trend. World War II had impressed DePuy with the essentiality of combining arms to achieve both suppressive fire and decisive maneuver. Thus inclined, he immediately endorsed Brigadier General Howze's ideas on overwatch during his first peacetime command in Europe in the 1950s. DePuy eagerly experimented with roles from the infantry on the mechanized battlefield when, in the early 1960s, he commanded the U.S. Army's first mechanized infantry regiment. Although command in Vietnam did not confront him with a mechanized enemy against which to test these ideas, he vigorously applied the technique of overwatching small lead elements of infantry with weapons capable of placing immediate suppressive fire on the enemy and thus allowing the lead and following elements to maneuver to encircle and destroy him. DePuy's command style there reflected a near obsession with exploiting airmobility to achieve rapid concentration. Although DePuy believed that victory was achieved on the battlefield by defeating the enemy's main force, his World War II experience with the 90th Infantry Division had convinced him to do that by avoiding enemy strengths and attacking enemy weaknesses to gain a decisive advantage over that force.

What DePuy saw in the October War further reflected his lifelong interest in the smallest echelons of the Army: its soldiers, crews, squads, platoons, and companies. To him, the main problem of the Arab-Israeli War was bringing the capabilities of each weapon to bear in concert so that the objective could be obtained. That problem progressed up the hierarchy from the squad leader, who had to order some men to fire so that others could move, to the general, who had to integrate all the capabilities of tanks, infantry, artillery, air defense, engineers, tactical air support, and logistical support. The new lethality dictated that, unless new techniques of movement were adopted by the lowest echelons of the Army, no amount of effort at higher echelons would produce success. These techniques themselves were an exercise in combining or integrating weapons effects to allow the movement that resulted in the enemy's defeat. They had to be mastered by sergeants, lieutenants, and captains whose Vietnam experience had not prepared them for this sort of combat. The colonel who wrote about the essence of a rifle squad in 1958, the division commander who relieved a battalion commander for poorly sited machine guns in 1967, the lieutenant general who lectured infantry drill sergeants on fire team leadership in 1973 came almost instinctively to this focus on the "cutting edge" of the Army. To DePuy, the October War demonstrated that the U.S. Army would have to be retrained, starting at the lowest levels and working up, to think about combat as a problem of weapons systems integration.[28]

Not only did the October War give General DePuy a chance to focus on the Army's doctrinal concepts, but it also provided him with a tailor-

made opportunity to link materiel development and acquisition to the concepts he espoused. In essence, the war provided issues and ideas against which to test on-going equipment acquisition programs. For example, the Israeli experience suggested that mechanized infantry had to participate directly in the tank battle by using onboard automatic weapons to suppress the enemy's ATGMs. One could measure how well different armored infantry carriers performed this task and then decide whether the improvement in capabilities between them was worth the attendant costs. The Israelis found that their World War II-vintage M3 half-tracks were unsuitable because they were too slow. They seemed satisfied with their wartime expedient, the newer, American-made M113 armored personnel carrier. To DePuy, the best vehicle was the controversial and expensive mechanized infantry combat vehicle (MICV), which, not coincidentally, was one of the Army's top procurement priorities for fiscal year 1973. Whichever vehicle was really best, DePuy saw this closing of the gap between materiel and tactics as a major TRADOC mission, and the October War provided him with a wealth of similar issues to bring to the task.

The U.S. Army digested the lessons of the Middle East War throughout 1974 and 1975. The first official analyses were completed by January 1974; the Brady Study was completed in June of that year, as was General DePuy's forwarding letter to the chief of staff of the Army. By February 1975, General DePuy gave selected audiences a complete, classified briefing titled "The Implications of the Middle East War on U.S. Army Tactics, Doctrine and Systems." The war did more than pose questions about tactics, doctrine, and systems; it brought sharp attention to the Army's unreadiness. Vietnam-experienced paratroopers who waited in full combat gear near their aircraft at Pope Air Force Base, North Carolina, during President Richard M. Nixon's worldwide military alert learned that they would not have been prepared to fight tanks in the Sinai Desert. The Middle East War posed the questions and spurred the Army to seek solutions while providing men like General DePuy with a compelling and universally recognized case in point. If TRADOC was to coordinate its initiatives in training, officer schooling, and combat developments so that all focused on preparing the Army for wars like the October War, then each of those initiatives must be founded on a common concept of how the Army should fight in such a war. The articulation of that concept must precede the other initiatives. ". . . the implications of the Middle East War . . . involved problems and challenges at every level from corps to company," wrote General DePuy to the Army chief of staff in February 1976. "TRADOC therefore embarked on a program to reorient and restructure the whole body of Army doctrine from top to bottom."[29]

Harnessing TRADOC, 1974

General DePuy believed that the lessons learned from the 1973 Arab-Israeli War confirmed his strategic outlook and his fundamental ideas about tactics. The lessons further suggested that the U.S. Army was not prepared for mid-intensity conflict, thereby providing an opportunity for the Army to focus on reform. To DePuy, one of TRADOC's missions was to guide that reform. Between the winter of 1973—74, when the Army digested the first analyses of the Arab-Israeli War, and the autumn of 1974, when General DePuy decided to rewrite all the Army's field manuals, he struggled to harness his sprawling command to the purpose of changing the combat doctrine of the entire Army.

This formidable bureaucratic task involved synchronizing the efforts of his own complex organization and integrating contributions from allies and the other services, while attempting to persuade Army commands outside his jurisdiction of the legitimacy of his work. All this was to be done against a ticking clock counting off the unknown remaining time to the next military crisis. TRADOC conducted the most important and controversial work, punctuated by three key decisions made by the TRADOC commander:

- DePuy allowed the U.S. Army Armor Center to lead other TRADOC agencies in developing the substance of the Army's doctrine.
- DePuy wrote down his tactical ideas in a single, concise description of the Army's first-priority combat mission.
- DePuy formalized TRADOC's efforts to influence the entire Army by deciding to rewrite *all* the Army's field manuals within eighteen months, making each consistent with his tactical ideas.

Training Literature

Some of the groundwork for doctrinal reform was well laid by the spring of 1974. DePuy's concept of standard scenarios as a baseline for combat and materiel developments had been approved by the chief of staff of the Army in November 1973, and the centers and schools were busy preparing their portions of each scenario. The Army Materiel Command, responsible for actual procurement of equipment for the Army, actively cooperated with TRADOC on the use of the scenarios for analyzing the relationship between

Brigadier General
(later General)
Paul F. Gorman

concepts and equipment specifications.[1] Meanwhile, dissatisfied with his assessment of the Army's training establishment, General DePuy directed his deputy chief of staff for training, Brigadier General Paul F. Gorman, to rewrite all the Army's training literature.

This mission yielded a series of training bulletins and circulars published by the various centers and schools, each in an attractive format, each describing a single, specific tactical function. Published by the Infantry Center at Fort Benning, Georgia, and the Armor Center at Fort Knox, Kentucky, and distributed widely throughout the Army, these important training documents described combat arms techniques that were consistent with DePuy's tactical thinking. These documents, however, did not carry the weight of approved doctrine but, rather, were feelers intended to generate comment from the field that would eventually lead to modification and consolidation of doctrine in formal approved field manuals. Thus, TRADOC had begun to assemble literature about combat techniques and to indirectly influence training and tactical thought throughout the Army before embarking on a formal program to rewrite all doctrine.[2]

The same tactical ideas that inspired these minimanuals were also incorporated into the Army Training and Evaluation Program (ARTEP), an important document that Brigadier General Gorman created. An ARTEP listed the critical tactical tasks that any given combat unit must be able to perform. For each task, the ARTEP specified the conditions under which a task must be performed and the standards of performance that must be

achieved for the task to be successful in combat. The ARTEP delineated tasks for all echelons from the squad through the battalion task force, including all components of such a force, such as its attached engineer platoon or air defense artillery platoon. For each task, three different standards were cited to reflect three different levels of combat readiness. Based on extensive operations research at Headquarters, TRADOC, the ARTEP provided the field commander with a single source for focusing his unit's collective training and for measuring its capabilities. Also disseminated throughout the Army as they were developed, the ARTEPs directed the field commander's attention to the appropriate manual or circular for detailed guidance on how to execute each of the critical tasks, again indirectly influencing the tactical thinking of the field army.[3] As the ARTEPs were approved as formats to replace annual Operational Readiness Training Tests (ORTTs), ARTEPs became a powerful stimulus to the adoption of new fighting techniques.[4]

None of this work was well advanced in the spring of 1974, but it was underway. Simply doing this work, however, demonstrated early the need for greater harmony among TRADOC's various agencies if TRADOC publications were to be sufficiently powerful to influence the entire Army.

The Armor Center Leads

The specter of the Arab-Israeli War of 1973 stimulated the Army's doctrinal renaissance in early 1974. Central among the lessons of that war had been the criticality of combined arms on the modern battlefield. The Army, however, in effect had no agency for evaluating combined arms problems. It had schools for each of the arms or branches (Infantry, Armor, Artillery, etc.) and a Combined Arms Center in name at Fort Leavenworth, Kansas. CAC, however, was too new, was changing too fast, and was chartered to focus at too high a level (division) to be useful in assessing the important tactical lessons of the war. So the U.S. Army set out to adopt the combined arms lessons of the October War through the Infantry and Armor Centers—two single-focus institutions.

Problems arose early. Believing that the Arab-Israeli War suggested the usefulness of combining tanks and infantry within a platoon, officers at the Infantry Center considered an interim doctrinal statement to that effect. However, "a problem exists in that Fort Knox has doctrinal proponency over tank employment and we have to write our manuals around their concepts."[5] A more pressing issue was that of brigade proponency. In March 1974, Headquarters, TRADOC, set off a donnybrook by assigning Fort Knox the task of preparing plans and orders for type armored and mechanized brigades to be used in combat modeling evaluations within each of the standard scenarios. This implied to the Infantry Center its loss of proponency for mechanized infantry, and indeed, such was nearly the case. "We . . . contend that the proponency for the 'heavy' and 'light' brigades . . . is at variance with [previous] agreements," protested Major General Thomas M. Tarpley, commander of the Infantry Center. In the then most important scenario being developed, that for a contingency in the Middle

Major General
Thomas M. Tarpley

East, the proposed assignments gave all the work to the Armor School, "leaving the Infantry School proponency for nothing." Tarpley further feared that his school's participation in future work on the European scenario "would also be reduced to zero," and he all but demanded equal time.[6]

General DePuy tried to calm the situation with a letter dated 8 May 1974. In this letter, DePuy acknowledged the difficulty of assigning proponency for brigades composed of more than one arm and admonished his commandants that "we will have to accept overlap of interests and even occasional duplication." He nonetheless went on to identify the Armor Center as the Army's "repository of professionalism on the employment of brigades composed mainly of tracked vehicles" and assigned it responsibilitiy for writing new training circulars on the armored and mechanized brigades. The Infantry Center retained proponency for infantry, airborne, and air-mobile brigades, as well as for all infantry battalions, including mechanized infantry battalions. Almost as a sop, Fort Benning was also to assist Fort Knox with its work on the armored and mechanized brigades and control the participation of mechanized brigades in scenarios when the specific contingency called for no other infantry forces. Perhaps also to assuage sensitivities, DePuy decreed that the new training circulars on the armored and mechanized brigades, when adopted as field manuals, would be numbered differently: not with a 7—xxx, as had earlier manuals of infantry origin, or with a 17—xxx, as had those of armor origin, but with a new 71—xxx "to signify a new series of combined arms manuals."[7] Clearly,

however, the U.S. Army Armor Center at Fort Knox, Kentucky, had been given primary responsibility for revising the Army's doctrine.

General DePuy had several reasons for this decision. He believed that responsibility for any single activity could not rest coequally on two agencies, especially if some product was expected quickly. The Arab-Israeli War had been a mechanized war in which the primacy of the tank had been confirmed with only some qualification. Certainly, the tank was central to the defense of NATO Europe, and it now appeared to be central to any conflict in the Middle East. To DePuy, the wars for which the Army must prepare were tankers' wars, and tankers should lead the effort.

DePuy was also inclined to give Fort Knox the go-ahead because of the personality of its commander, Major General Donn A. Starry. Starry was a protégé of General Abrams, and DePuy was "confident that [Starry understood] tactics" to a degree superior to most "other people of any rank in the Army."[8] Starry was aggressive and enthusiastic in his efforts to bring the doctrinal lessons of the Arab-Israeli War home to the armor community. During Starry's first weeks at Fort Knox, he bombarded DePuy with personal telegraphic messages outlining new initiatives, proposing changes in priorities of missions, and seeking support in controversies with other Army activities. DePuy was not always pleased with his Pattonesque apostle of tank warfare, but DePuy knew that Starry was a self-starter who would spare no effort to get things done.

The climate Starry created around Fort Knox contrasted sharply with that at Fort Benning. Major General Tarpley was as competent as Major General Starry, but neither Tarpley nor his colleagues at Fort Benning were quite as ready to step to the steady drumbeat of mechanized warfare that the Arab-Israeli War provoked. Even had they been, it is unlikely that they could have readily overcome more than a decade's intense experience preparing officers and soldiers for the infantry-dominated war in Vietnam. Both personal and institutional experience placed Fort Benning in the unenviable position of advocating consideration of the lessons of the last war at a time when the Army was consciously trying to avoid that perceived bugaboo and gird itself to fight and win the next one, a war heralded by the events in the Sinai and on the Golan in October 1973. "I wanted the Infantry School to get away from the 2½ mph mentality," said General DePuy years later, "but they were in the hands of light infantrymen . . . they didn't do the mech infantry well at all. They didn't understand it . . . that is why I took these draconian measures with them. To shake them out of that lethargy."[9]

No such shaking was required at Fort Knox. If anything, DePuy probably worried that Starry would act too fast and create an open debate over doctrine within the Army before TRADOC was prepared to lead the effort. Starry saw extensive and early dialogue with the field army as a necessary ingredient of TRADOC's recipe for doctrinal reform.[10] To Starry, TRADOC's initiatives in doctrinal literature and in training junior officers and noncommissioned officers (NCOs) would not overcome the time-honored tradition

Major General
(later General)
Donn A. Starry

of a field commander employing his force as he sees fit. When a field commander prescribes his unit's training and war plans, he has ultimate authority over its tactical doctrine. Therefore, without the field commanders' active collaboration in the doctrinal reform process, they would not feel obligated to adhere to doctrine developed only by TRADOC. "It will not suffice to simply send our training circulars out and trust that they will be acclaimed on the basis of their eminent logic," Starry warned his boss after a visit to Europe in April 1974. "Groundwork must be laid, it must begin in the chain of command; like everything else, one has to talk about an idea persuasively for a while before it has any chance of being accepted." Starry left no doubt as to the importance of this persuasive effort: "I am fearful that we won't make the headway we hope for . . . unless a very carefully thought out preparatory dialogue is set up with commanders all over the world."[11]

General DePuy did not want a dialogue he could not control. His many initiatives, still in their earliest stages, were designed to give the TRADOC commander a decisive voice in the formulation of doctrine, and these initiatives needed time to mature. Therefore, a dialogue would be possible only after TRADOC-trained officers had permeated the field army. That, however, depended wholly on how aggressively the school commandants integrated the new ideas into their curricula.

Probably in response to Starry's urgings, DePuy made this point explicitly when, in May 1974, he issued a three-step plan for the dissemination

of doctrine to the Army. There would be a dialogue with the field commanders, but it would consist of DePuy's own apostolic visits to their headquarters, as step two, and a series of clinics or seminars on tactics as step three, sponsored jointly by the Infantry and Armor Centers. Neither steps two nor three would proceed before step one was taken, that is, until the new techniques now going into training circulars were "published and the instructors in the schools . . . believe in it and [are] teaching it." To Tarpley, Gorman, and especially Starry, he wrote, "I know this sounds slow, but we cannot move out on either educational or salesmanship programs until the basic work is done at the schools. . . . In short, I am prepared to go to steps two and three when you have finished your work on step one, but not before."[12]

This mild rebuff set the pace at which TRADOC would proceed. It did not change the Armor Center's primacy in the doctrinal development effort, nor did it solve the problems inherent when one Army branch writes doctrine for another. Brigadier General Gorman recognized this problem immediately as he attempted to design an ARTEP common to armored and mechanized task forces,* a project stimulated by the greater integration of arms required by the lessons learned from the Arab-Israeli War.

In theory, any task force, whether composed of a tank battalion with mechanized infantry units attached or a mechanized infantry battalion with tank units attached, should be capable of performing equivalent tasks on the battlefield. In trying to specify these tasks and the conditions and standards to which they must be performed in an ARTEP common to all armored and mechanized task forces, Gorman discovered that reality did not easily conform to theory.

First were the practical difficulties. The organization of the headquarters companies of the two battalions differed, meaning that the base of logistical, communications, and staff capabilities of a task force built around an infantry battalion was not the same as that of an armored battalion task force. Likewise, the two battalions' combat support companies differed in that the task forces would have different reconnaissance, air defense, mortar, and antitank guided missile capabilities. Brigadier General Gorman discovered differing doctrinal nuances among armor and infantry officers, for instance, in their concept of the purpose and organization of an assembly area and in their notions of how to plan for supporting artillery fires. Finally, he perceived a distinct difference in leadership styles between tankers and infantrymen, the former preferring to command from a tank turret and the latter from a relatively stationary command post.[13] All these difficulties hampered the articulation of common tasks. More important, these problems suggested that serious institutional obstacles existed that fettered com-

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*A task force is a battalion-size combat element that includes both tanks and mechanized infantry. It is not a permanent organization but a temporary one created by a brigade commander by cross-attaching or exchanging one or more companies between his pure tank battalions and his pure mechanized infantry battalions.

manders in the rapid cross-attachment of units that modern warfare seemed to require.

None of these problems were insurmountable. What troubled Gorman even more than the practical difficulties of getting infantry and armor together was his sense that the two centers were developing doctrine along divergent paths, and he blamed the Armor Center. Major General Starry, tactically self-confident, aggressive, believing he enjoyed the favor of the chief of staff of the Army, and since May tapped by General DePuy to lead the Army's most important doctrinal reform initiatives, was perhaps moving too fast and thereby missing the combined arms essence of what General DePuy believed the new doctrine should be. Brigadier General Gorman left no room for doubt when he wrote DePuy, recommending that Starry be reigned in:

> In the course of writing the Armor ARTEP, I encountered what I would term "doctrine by slogan." It was asserted that "Armor never conducts a deliberate attack;" that "Armor never attacks a defendable locale, but goes around;" that "tanks do not defend ground, that's the job for infantry." These nostrums . . . made it difficult for me to devise tests for the Armor Battalion [*sic*] like those envisaged for the Mechanized Battalion [*sic*]. . . . I believe strongly, in the interests of developing effective combined arms operational capabilities in the field, we must stamp out sloganeering and semantic differentiation at both schools. My sensing is, however, that the Armor school is the principal offender. [You are] going to have to issue some strong guidance to the effect that Infantry and Armor will fight *together*, using the unique capabilities of each branch to best advantage, but always operating as a team.[14]

General DePuy was not as alarmed as Gorman by this situation and did not restrain Starry in any formal way. DePuy was confident that his Armor School commandant's actions were fundamentally consistent with his own ideas. Proof came in the form of a missive dated 8 July 1974, in which Starry explained the fundamentals of tactical doctrine as he saw them.

Based on the lessons drawn from the October War that the modern battlefield, whether in Europe or elsewhere, would be characterized by massive numbers of highly lethal antitank and antiaircraft weapons and that U.S. forces would be outnumbered from the start, Starry posited new priorities for armor tactics, which included:

- Detecting and identifying the enemy main body at maximum possible distances.
- Teaching tank gunners to fire fast first.
- Controlling and distributing antitank fires so that ammunition is available to engage succeeding enemy echelons.
- Delivering suppressive fires from overwatch.
- Flying Army aircraft nap of the earth or as close to the ground as possible to use terrain and vegetation as cover and concealment without limiting mobility.
- Destroying enemy air defense weapons.

- Using reverse slopes as avenues of approach for attack and counterattack.
- Fighting with skill at night and in periods of reduced visibility.
- Using highly reliable tactical communications.
- Employing highly flexible, responsive, and self-sufficient logistical support.[15]

Most of these ideas were in, or were consistent with, a draft concept paper that General DePuy circulated later in July.

The point of Major General Starry's message was not so much to announce new doctrine, for he and DePuy agreed on most ideas about tactics. The point was to demonstrate what he was doing to export his ideas to the field, thereby implying that the Armor Center was well along with step one of DePuy's three-step plan and, by example and implication, was urging his boss to initiate steps two and three:

> Now what I've done is to include a tailored version of [the new priorities] into: the battalion ARTEP; [training circulars] for the tank platoon, armored cavalry platoon, company team and tank gunnery. When the time comes a suitable version will appear in [training circulars] on [battalion task forces and brigades]. A version will appear in my personal column in *Armor* [magazine] for September—October. A version will . . . be used . . . to drive the combat developments process in the right direction. Target 1 August. A version will be delivered by either Huck [Starry's deputy] or me to every officer and NCO class at Knox starting immediately. And finally, I'm sending a letter to the scattered armor brotherhood from battalion commander up saying this is what we think and here's what we're doing about it. This will go out within the month.

Starry wanted to suppress what he saw as "a lot of opposition" to TRADOC initiatives. In case the point was missed, he concluded, "If you disagree at all, I'd appreciate knowing it now. We really have to get moving—we had precious little time to begin with, now we may have even less."[16]

Writing a Concept

General DePuy may have been irritated at the admonition that time was short, but he did not restrain Starry. Nor did DePuy become enmeshed in the differences of how armored and infantry forces operated. Starry's tactical ideas were consistent with DePuy's, and Starry was getting the job done. However, Brigadier General Gorman's admonition could not be ignored. The perception that the new doctrine was based narrowly on the whims of the Armor Center could be as damaging as prematurely soliciting the participation of the entire Army. General DePuy therefore acted to gain within TRADOC a broader consensus for, and a more thorough understanding of, the doctrinal changes he espoused. His method was to write a comprehensive statement of those ideas.

To ensure that the initiatives undertaken by the several centers and schools sprang from a shared concept of combat operations, General DePuy circulated to his subordinate commandants a draft concept paper that was to be a living model from which and with which they were to derive and

coordinate their doctrinal work. Written under General DePuy's personal guidance by a small cell of majors and lieutenant colonels attached to Gorman's office, this draft was TRADOC's first attempt to make a comprehensive statement about how the Army was to fight. This concise package of the ideas was to become FM 100—5. Informed by weapons systems analyses, operations research, and lessons learned from the October War, the draft concept paper nevertheless bore the stamp of William E. DePuy like a fingerprint.

"The commander who minimizes his own vulnerability by covering and concealing his own forces while at the same time suppressing or destroying the weapons of the enemy can dominate any battlefield even against much larger forces." This, asserted the paper, is the basis for all combat operations, applying with equal logic to all echelons from a squad to a corps. "In mobile warfare the tank is the decisive weapon." Infantry and artillery are mainly to assist the passage of tanks to "the enemy's rear or onto critical terrain features" from which "the enemy's system of defense can be defeated." This called for *Panzergrenadier*-like infantry tactics, suppressing enemy short- and medium-range antitank fire with automatic weapons fire from the infantry's carriers whenever possible and, when not possible, "dismount[ing] and under the overwatching suppressive fire of the armored vehicles, assault the enemy positions on foot with grenades and small arms." Overwatch was continually emphasized: "A good commander at any echelon will find the enemy with a small part of his force—be able to deliver suppressive fire instantly—and have a maneuver element on hand, covered and concealed from the enemy."

If these ideas were rooted in DePuy's experiences of the 1940s, 1950s, and 1960s, the draft concept paper also emphasized ideas about recent developments. It was indeed an effort to grapple with the next war and not the last one, stressing the "greatly increased lethality and numbers" of air defense weapons and "the practice of moving them with the foremost elements." The conclusion was that "air defense suppression in concert and collaboration with the U.S. Air Force is now one of the most important operational problems facing the ground commander." Other points acknowledged in the paper were the changes wrought by the increased ranges and accuracy of antitank guided missiles and the attempt to transfer the Army's Vietnam experience in airmobility and recent developments in attack helicopter technology to the battlefield environment of the October War, where helicopters had not been used significantly: "airmobile infantry . . . could be decisive in trapping [the enemy's] light forward units [in a pursuit]," and "the tank-killing helicopter . . . adds a new capability for attack, defense and delay . . . we do know enough from operations in Vietnam and from extensive testing and experimentation to describe the considerations which should govern its initial commitment to combat."[17]

As interesting as the paper itself was the intended role for it in TRADOC's doctrinal efforts. Not for publication, but for comment, amendment, and additions, the draft concept paper was to be the point of departure for doctrinal discourse among TRADOC's senior officers. Its purpose was

to provide a "conceptual basis for the determination of weapons systems requirements" and to "find [its] way into your doctrinal manuals and your instruction in both officer and NCO schools" *if* the commandant found it "relevant and useful to your business." It contained "tactical concepts on which I hope we can agree through the medium of this paper." The Air Defense Artillery and Engineer Centers were to provide supplementary material to improve perceived weaknesses in the concept in their areas, but otherwise DePuy "[did] not expect or wish to whip up a lot of additional paperwork." He wanted his commandants to keep the paper alive and improving as an informal but shared working model, much like, in DePuy's analogy, a pot of soup in the home of a French peasant, to which all in the household contribute and from which all may draw.[18]

By the end of the summer of 1974 and his first year as TRADOC commander, General DePuy believed that his command was off to a good start. DePuy hoped that the ideas in the draft concept paper were percolating through the Army's school system and bringing into harmony the potentially divergent initiatives of the various branches, especially at the Infantry and Armor Centers. Officers and NCOs attending the schools learned the new techniques and doctrine and took that learning with them to their units. The training literature, special TRADOC bulletins, ARTEPs, and TRADOC-produced video tapes began circulating throughout the Army. DePuy hoped that units using the new techniques would provide critical feedback. TRADOC also applied the same concepts that drove its training initiatives to the standard scenarios to derive weapons systems specifications and force planning data for the Army Materiel Command and Department of the Army. DePuy believed that the application of the same operations research and analyses to both the Army's doctrinal efforts and its weapons systems development represented "a major new departure for the United States Army." Said he, "we have now established what I believe is a most productive, direct and close reinforcing relationship with . . . the Department of the Army, the Operating Forces and AMC [Army Materiel Command]."[19]

Expanding the Dialogue

That being the case, and with at least the Armor School complying with step one of the three-step plan, General DePuy decided that steps two and three could be implemented. He scheduled a joint FORSCOM-TRADOC conference on tactics called Octoberfest for October 1974 and, in the same month, planned to visit U.S. troops in the Federal Republic of Germany. The Octoberfest conference convinced General DePuy that the time had arrived to formally rewrite the tactical doctrine of the U.S. Army, a decision reinforced by his visit to Germany and the on-going revision of the draft concept paper.

Octoberfest brought together at Fort Knox, Kentucky, many of the general officers from the Forces Command and the Training and Doctrine Command, as well as many brigade- and battalion-level commanders and observers from Seventh Army in Europe, Eighth Army in Korea, and units stationed in Panama and Alaska. Officially, the conference's purpose was

to examine small-unit (squad, platoon, and company) infantry, armored, and combined arms tactics in light of the lessons of the Middle East War. The not-so-hidden agenda was slightly different: to sell the assembled commanders on emerging TRADOC tactical doctrine. To that end, General DePuy and Major General Starry personally supervised the rehearsal of the several live-fire maneuver demonstrations that collectively were the centerpiece of the conference.[20]

Carefully orchestrated to lead the attendees to specific conclusions regarding tactical techniques in modern, mid-intensity warfare, Octoberfest was also a legitimate and sincere attempt to focus the attention of some of the Army's most powerful figures on the "really important problems of the Army."[21] Rarely if ever before had those who wrote the manuals met directly with those who commanded the soldiers, and this step in the right direction received acknowledgment. The conference caused its attendees, theoretically the Army's best and most experienced soldiers, to set aside for the moment their macromanagement concerns with budgets and construction and personnel policies and think about the combat soldier, his unit, how he should fight, and how he should be trained. It carefully spelled out in briefings, followed by impressive live-fire demonstrations, the TRADOC-DePuy-Starry argument for abandoning old methods and habits (especially those carried over from Vietnam) and adopting new ones, justified by the October War and characterized by overwatch, suppressive fires, combined arms, terrain masking, and the use of camouflage and smoke. In short, the Octoberfest conference efficiently brought an important problem to the attention of a significant group of Army decision makers and offered a substantive solution.

As a political tool for getting that solution accepted Armywide, Octoberfest earned high marks. Certainly, the conference showed the primacy of the Armor School in TRADOC's doctrinal development process: no amount of effort to present a united front could have obscured the significance of the conference site at Fort Knox and the role of Major General Starry in preparing it. TRADOC briefers at the conference continually stressed step one of the three-step plan, that is, that the techniques being demonstrated were what the sergeants, lieutenants, and captains joining the operating forces would have been taught while attending TRADOC schools, a fait accompli subtly suggesting that the techniques were not entirely open to debate. Most important, whether or not the Octoberfest attendees agreed with what they saw, they were unprepared to offer rebuttal to the carefully staged, coherent, and assertive TRADOC initiatives. On the final day of the conference, an executive session of general officer attendees yielded no significant opposition to, or critique of, the techniques displayed. General Walter T. Kerwin Jr., commander of FORSCOM, who in the past had kept TRADOC ideas at abeyance, gave the new techniques an important if qualified boost before the close of the executive session: "I want you commanders to get with it and try the new concepts and techniques," but he added, "Test the doctrinal changes and if you have problems, let TRADOC know."[22] If the conference did not end with a ringing endorsement of TRADOC's ideas by all concerned, it did end on a positive and agreeable note that General DePuy called "a consensus."[23]

Such a rare thing for the Army was not to be wasted. So pleased was General DePuy with Octoberfest that he decided to act immediately to exploit the apparent consensus and not to let it vanish. Not only did a significant portion of the "high priced help of the Army" now know about and at least not disagree openly with DePuy's tactical ideas, but there was tacit approval of TRADOC's leading role in the doctrinal process, an equally significant phenomenon for an institution barely a year old. "I intend that we rewrite all the important field manuals in the United States Army and have them published by 30 June 1976," he ordered his school commandants on 10 October 1974. "We have now participated in enough discussions, listened to enough briefings, and seen enough demonstrations to have the best consensus on how to fight that has probably ever existed in the school system of the United States Army. It is now time to institutionalize and perpetuate this consensus through doctrinal publications."[24] The most important of these would be FM 100—5, *Operations*, the "capstone manual of the operations of the Army in the field" from which all other manuals would take their doctrinal cue. Having made this decision, General DePuy was not one to delay its implementation. He directed his commandants to meet with him on 13 December 1974, scarcely two months hence, to collectively review and approve drafts of the first three manuals, including 100—5. And DePuy was serious about the schedule he had proposed: "I look to each of you personally to bring this about. If necessary, you must write them yourselves, as I hold each of you personally responsible for achieving the objective I have set."[25] Having decided what was needed, DePuy told people to do it, and he would check to see that they did.

Before the end of October, events confirmed that DePuy had made a timely decision. His official visit that month to U.S. Army, Europe, and the German Army left him with two distinct impressions. First, U.S. troops in Europe were not adopting the new techniques despite their receipt of TRADOC training circulars and TRADOC-trained junior officers and NCOs. If a major justification for the new doctrine was its relevance to mid-intensity warfare in Europe or the Middle East in contradistinction to Vietnam, it would not do for the Army in Europe to fail to adopt the doctrine. Therefore, a full and coherent statement of the doctrine in a "family" of manuals blessed by Department of the Army might be more influential than the more subtle approaches taken thus far. Second, in DePuy's estimate, the German Army was superior to the U.S. Army in its concepts for the employment of armored and mechanized forces. DePuy attributed this to the Germans' better understanding of *Panzergrenadier* techniques in armored warfare and, significantly, to their having articulated that understanding in a basic statement of doctrine applicable to the whole German Army—HDv 100/100, the German equivalent of FM 100—5.[26]

Also in October, General DePuy received the Infantry and Engineer Schools' contributions to his draft concept paper, which had been requested in July to improve weaknesses in the concept. Major General Tarpley made a last, futile effort to remove "the tank is the decisive weapon" from the concept and contributed some excellent material on airmobility. Major General Harold R. Parfitt's engineers added material on the employment of

their branch, as DePuy had requested. Neither school challenged the premises or the fundamentals of the concept. That challenge would come in December from an unexpected quarter: the designated author of the capstone manual itself. From Fort Monroe at the peak of a warm Virginia autumn, the consensus appeared intact, the opportunity for initiating a wholesale doctrinal reform of the Army excellent.[27]

Conflicting Ideas, 1974—75

In the autumn of 1974, General DePuy decided to rewrite all the Army's manuals for consistency with FM 100—5, *Operations*, the capstone manual describing the fundamentals of the conduct of modern warfare. He turned to the Combined Arms Center at Fort Leavenworth to write this manual. The document that Leavenworth, and more specifically its commandant, Major General John H. Cushman, produced for that first meeting of TRADOC's senior commanders at Fort A. P. Hill, Virginia, in December 1974, did not meet with DePuy's approval. Moreover, Cushman's manual indicated significant philosophical differences between Generals DePuy and Cushman—and therefore within the Army—about the purpose of doctrine and the conduct of warfare. Since these two generals did not resolve their differences during the first four months of 1975, General DePuy transferred responsibility for FM 100—5 from CAC to Headquarters, TRADOC, at Fort Monroe. The result was twofold: first, Department of the Army received from TRADOC, on schedule, a coherent, assertive body of doctrine largely undiluted by institutional compromise, and second, that very lack of compromise meant that FM 100—5 lacked important insights on warfare and doctrine that might have greatly enhanced its credibility.

Fort Leavenworth: The "Integrating Center" That Wasn't

Under the Operation Steadfast reorganization of the Army, the mission of writing combat doctrine returned to Fort Leavenworth after a ten-year hiatus with the now disbanded Combat Developments Command.[1] As one of TRADOC's three integrating centers, CAC monitored training and doctrinal work in the combat branch schools and actually wrote doctrine that applied to more than one branch, that is, to division level and higher. CAC, and specifically the Department of Tactics of the U.S. Army Command and General Staff College (USACGSC), one of CAC's two principal institutions, had proponency for FM 100—5.[2]

Until General DePuy announced his intention to rewrite all of the Army's field manuals, writing FM 100—5 had not been Leavenworth's top priority, nor had Leavenworth been intimately involved in TRADOC's training literature initiatives. CAC had responsibility not only for FM 100—5 but for twenty-three other manuals as well. Most important of these was FM 100—15,

Larger Units: Theater Army-Corps, a project of interest to the Army chief of staff.[3] Other important Leavenworth missions in the first eighteen months under the new TRADOC structure included fielding the Brady Study of the Middle East War, producing the scenarios so important to TRADOC's combat developments procedures, hosting a series of defense conferences to analyze the problems of a nonnuclear defense of NATO Europe, adjusting USACGSC's curricula to reflect General DePuy's mandated emphasis on the division as opposed to higher echelons, and integrating the operations research functions of the new Combined Arms Combat Developments Activity (CACDA), CAC's other principal institution, into the doctrine-writing process performed by USACGSC. In this environment, the writing of FM 100—5 did not receive Major General Cushman's exclusive attention.

If FM 100—5 was not a top priority at Leavenworth, neither was the writing of training circulars by the branch schools. Leavenworth was not a higher headquarters to the branch schools but an integrating center with no real authority over their activities. Headquarters, TRADOC, began the training literature initiative under Brigadier General Gorman's supervision. He had dealt directly with each of the schools because almost all the early training circulars identified specific tactical techniques that could be linked to one of the schools as the exclusive proponent. Moreover, since General DePuy had an intense interest in training literature, his headquarters supervised its development directly. TRADOC might have requested CAC to resolve such intramural squabbles as those that arose during the writing of an ARTEP. But an ARTEP was, after all, a training document, not doctrine, and its focus was the battalion, whereas CAC's emphasis was at division and higher. Likewise, CAC might have mediated the controversy between the Infantry and Armor Centers over brigade proponency had General DePuy not stepped in with his decision to make Fort Knox proponent for armor and mechanized infantry. Even General DePuy's conclusions from the lessons of the October War had a more immediate impact on the branch schools than they did on CAC. Describing the new movement techniques and use of suppressive fires required of mechanized formations, DePuy reported to General Abrams in June 1974 that both the Armor and Infantry Schools would incorporate them in all tactical training immediately.[4] The result was that, by the time General DePuy decided to rewrite all the field manuals, much doctrine had already been written, key players identified, and major concepts agreed on, all without intensive participation from CAC.

Different Generals, Different Ideas

Presiding over and stimulating much of Leavenworth's activity in 1973 and 1974 was its new commanding general, John H. Cushman. Graduated twelfth in his 1944 West Point class and originally commissioned in the Corps of Engineers, Cushman's career could not have been more different from DePuy's unless it had been in a different army. As a junior engineer officer in the Pacific theater, Cushman saw only the end of World War II. Much of his subsequent career made use of his powerful intellect and rewarded him with a reputation as one of the Army's real intellectuals: post-

Major General
(later Lieutenant General)
John H. Cushman

war service with the Special Weapons Project at Sandia Base, New Mexico; graduate work at the Massachusetts Institute of Technology; liaison officer to the I Belgian Corps in Germany in 1954; faculty member at USACGSC from 1955 to 1958; and then successive assignments with the chief of staff of the Army, with the Office of the General Counsel, Department of Defense, and as military assistant to the secretary of the Army. A soldier as well as an intellectual, Cushman had transferred to the Infantry in 1951. From 1951 to 1953, he served as operations officer of a battalion and regiment in Europe and, as a major, commanded a battalion. Although, like DePuy, he missed the Korean War, he served three tours in Vietnam as a senior adviser to a Vietnamese division (1963—64); commander of the 2d Brigade, 101st Airborne Division (1968); and commanding general, Delta Regional Assistance Command (1970—71). His most significant assignment after returning from Vietnam and before assuming command at Fort Leavenworth had been as commanding general of the 101st Airborne Division at Fort Campbell, Kentucky.[5]

An intellectual who had worked in the highest levels of the Army and an infantryman with little experience in armored operations, Major General Cushman considered himself an accomplished trainer of soldiers and shared at least some of General DePuy's perceptions in 1973. First and foremost was "that somebody had to get the Army moving. . . ." In the turbulent early months of TRADOC's establishment, when the Leavenworth commander was relatively free to command as he saw fit, there was reason to

believe that the relationship between CAC and TRADOC would be congenial. Both Generals Abrams and DePuy supported the selection of Cushman as commander of the Combined Arms Center. Major General Cushman agreed completely with General DePuy on the need to ground doctrine and training in real-world situations and circumstances, and Cushman stressed realism above all in the classrooms at USACGSC. The same rigid tactical formations that DePuy decried in the wake of the October War, Cushman censured as "pattern without thought."[6]

The similarities between Cushman and DePuy were coincidental, however. The differences in outlook between these two men not only reflected their different backgrounds but made their different backgrounds pale by comparison. General DePuy believed that real initiative was rare in human beings and that an organization functioned best when its members were frequently told in simple terms what to do. Major General Cushman believed that an organization worked best when liberated, to the degree possible, from the artificial constraints placed on the tremendous creative potential of the group. He therefore encouraged, for example, student participation in the college's writing of doctrine, an initiative about which DePuy was skeptical. Assuming real creative intelligence to be rare, DePuy preferred to isolate a few select officers to work directly and solely on important projects under his immediate supervision. Cushman would more likely involve many in the problem-solving process and would encourage alternative solutions. DePuy wanted USACGSC to *train* its students to be experts in handling a division in combat and to take with them to their field assignments a learned system for training their division's subordinate elements. Cushman wanted to *educate* students as well as train them, to make them think, to enrich them personally and professionally, and to prepare them intellectually for all of their years as field grade officers. DePuy was confident, analytical, and decisive and never hesitated in delivering a "that's *wrong*" when the "cold hard facts" told him it was needed. Cushman was thoughtful and reflective, acknowledging at least philosophically the potential merit in all ideas.[7]

Being so dissimilar in intellectual character, Generals DePuy and Cushman, not surprisingly, had different approaches to doctrine. Indeed, they represented fundamentally opposite schools of thought about doctrine and its purpose for the Army. The DePuy school considered doctrine as a tool with which to coordinate the myriad activities of a complex organization, a function General DePuy grasped in earnest after the 1973 October War. Doctrine consisted of those tactical techniques necessary for success on the modern battlefield that the schools and training centers taught and published in circulars and manuals. As important, doctrine was an expression of the concepts against which researchers tested Army equipment, as well as a channel of communication with which to influence the activities and thinking of the field army. Consequently, to change the Army, one changed its printed doctrine. The DePuy school held that the institutional purposes of doctrine were as important as its substance and that doctrine should therefore be simple, clear, and specific.

The Cushman school was a direct contrast. Although FM 100—5 had not been Major General Cushman's top-priority project until the fall of 1974, the writing of doctrine generally had topped his agenda since his assumption of command at CAC. To Cushman, the substance of doctrine was more important than its institutional purposes. "The search for valid doctrine is, at its root, a search for truth." By theory, experience, and inductive reasoning, one could make "an enlightened exposition of what usually works best," which was doctrine. Doctrine may serve a variety of institutional purposes, but its most important function was to provide "the best available thought that can be defended by reason . . . [to] indicate and guide but . . . not bind in practice. . . ." Simplicity was desirable but not at the cost of being restrictive. Doctrine was a guide that allowed for the infinite variety of conditions and situations characteristic of human affairs. It therefore required "judgment in application." If this meant that doctrine contained ambiguities that hampered its bureaucratic utility, that was acceptable. Doctrine's only requirement was that it "stand the test of actual combat."[8]

The DePuy and Cushman schools of doctrine were not mutually exclusive. They differed in the degree of emphasis each placed on two important functions of doctrine: to guide judgment in combat, on the one hand, and on the other, to provide a conceptual starting point for many other institutional activities. This latter function was most important to William DePuy. Because the training establishment needed to be overhauled, because materiel development and procurement needed to be rationalized, because the Army needed to prepare for a mission wholly different from its recent experience, the Army therefore needed a doctrine. To determine what that doctrine would be, DePuy relied primarily on his own experiences in combat, reinforced by analyses of war games and the October War and the judgment of a small group of trusted assistants.

The Cushman school approached the development of doctrine from the opposite direction. An army's purpose is to win wars or to be perceived as so likely to win that potential enemies refrain from war. Therefore, the Army as an institution must constantly study war thoroughly and make available to all within it the latest and best thought about warfare. When published as doctrine, such thought should be an authoritative guide to the judgment of the Army's agents in all activities, whether they are preparing contingency plans for the defense of NATO Europe or determining the specifications for a new tank. Therefore, by definition, doctrine served the institutional purposes so important to the TRADOC commander, but doctrine was not created for these purposes. Doctrine was the natural product of the Army's thinking about war.

If there were DePuy and Cushman schools of doctrine within TRADOC in 1974, so too were there DePuy and Cushman schools of tactics. Tactics to General DePuy was the specific combination of learned techniques that a commander applied to a given battlefield situation. The techniques essential in any tactic appropriate to the modern battlefield were suppression, overwatch, the indirect approach, making contact with a small element, and

the rapid concentration of force against the enemy main body. Supported by detailed analyses of Soviet and U.S. weapons capabilities, these techniques carried the weight of inviolable rules. In the Cushman school, there were no rules. A commander must certainly ground his tactics in detailed knowledge of his own and his enemy's capabilities, but whether overwatch, suppression, or any other technique was appropriate depended entirely on the specific situation. Only generally demonstrable principles to guide judgment could be learned. "It is better that a tactician go to the essentials of a single situation and solve it well than that he memorize all the rules ever written." Like General DePuy, Major General Cushman believed that the Army desperately needed to rethink its approach to teaching tactics both in the school system and in the field. And he believed that, as commanding general of CAC, he was in a unique position to stimulate that renaissance. The difference was in his approach: teaching tactics did not mean teaching techniques derived from weapons systems analyses; it meant teaching leaders how to think through tactical situations for themselves.[9]

Different Ideas, Different Manuals

The draft of FM 100—5 that USACGSC prepared for the meeting at Fort A. P. Hill was more than a reflection of Major General Cushman's intellectual character and his school of doctrine and tactics. It was a critique of the DePuy school. Even though Cushman's draft FM 100—5 used the same thoughts and language that DePuy had used so many times in speeches and his draft concept paper, the manual's conclusions were nearly opposite of DePuy's convictions.

"Tactics," the draft manual asserted on its first page, paraphrasing the Infantry School's 1934 book *Infantry in Battle*, "is a thinking man's art. It has certain principles which may be learned but it has no traffic with rules." Throughout, then, Cushman's manual emphasized the nine abstract principles of war that have been a part of U.S. Army doctrine since 1922. It made no mention of overwatch and only vaguely stressed suppression. Even the seemingly unassailable DePuyism that one always goes around the enemy and not into the teeth of his defenses was open to question: while the indirect approach is "usually preferred, . . . the attacker may have a mission that requires him to go directly up against terrain strongly defended by an enemy." Describing the "modern battlefield" in standard TRADOC terms (highly lethal, enemy has comparable equipment in superior numbers), the Leavenworth manual likewise stressed the need for combined arms cooperation but emphasized emphatically that "there are no supreme weapons systems." The tank got no special recognition as the "decisive" weapon, and the helicopter got at least equal emphasis.

Acknowledging the scarcity in the Army of "born" tactical leaders, the manual concluded that orders did not need to be direct, frequent, and simple but that leaders must constantly teach what they know, both the "how" and the "why," so that, in each unique situation, "peerless execution" will derive "from the marvelous ingenuity and endless imagination of the American soldier." Undue detail in orders will confine and confuse subordinates;

a commander must keep a "strong hand on the battle" while allowing his subordinates "freedom of action."[10] Consistent with this latter theme, the draft manual was descriptive and suggestive, admonishing the reader but not directing assertively that one must do things a certain way.

As Major General Cushman prepared for the meeting at Fort A. P. Hill, he apparently had every confidence that the manual he and his staff had written was about to become the capstone manual of the U.S. Army's combat doctrine. "We . . . have to get the views of the TRADOC community before we can put the manual on the street as a test manual," he said as he announced distribution of the draft within USACGSC and CACDA, but he also directed these organizations to "start writing the applications doctrine" as if the draft had already been approved. In the manual's emphasis on original thought based on principles as opposed to adherence to memorized rules, Cushman believed that the manual held the key to a "new approach to doctrine and tactical instruction in the classroom and in the field."[11] He might have been less confident had he seen what General DePuy was even then scrawling across the frontpiece of a similarly worded manual written at Leavenworth titled *The Division in the Defense*: "sophomoric. . . . We are teaching not debating . . . there is no concept—no connection with weapons effectiveness, suppression, mobility, blocking, etc., etc."[12]

The clash of the DePuy-Cushman schools of doctrine took place at the meeting General DePuy had called at Fort A. P. Hill from 10 to 13 December 1974 and at a subsequent meeting held there from 29 April to 1 May 1975. At the first conference, DePuy rejected Cushman's draft of FM 100—5 not because of its content, even though its content criticized most of General DePuy's strong convictions about combat, but because of its style. Boring and too much like older manuals with its numbered paragraphs and dry language, the Leavenworth manual was not likely to serve well as the centerpiece of a TRADOC-directed effort to refocus the energies of the entire Army. The manual did not contain the "deathless prose" that would "convey to the Army the [necessary] sense of urgency."[13]

Certainly, General DePuy realized the degree to which the Leavenworth draft contradicted his own beliefs, and certainly, that contradiction contributed to his decision to reject the manual. His emphasis on style in rejecting it, however, clearly demonstrated his philosophical approach: the institutional purpose of doctrine is at least as important as the doctrine itself. If the purpose is to "retrain, reorient, and refocus" an army, the style and wording must express a clean break with the past, and the messages must be hard-hitting, compelling, and coherent throughout. Here, the issue of style begins to cross the thin line that separates it from substance; the purpose of the manual detracts from the doctrine the manual contains. Some doctrinal issues defy simple expression (defining combat power, for example), and others, such as the employment of tactical nuclear weapons, create problems of consistency and coherence in a comprehensive expression of doctrine. Hard-hitting, compelling messages tend to be those that express certainties, and much about doctrine, given its dynamic nature, is uncertain in the scientific sense. Moreover, the search for compelling messages easily

leads to imperatives, to rules not only of action but of thought. The Leavenworth draft may have erred on the side of ambiguity and a boring style, but when General DePuy rejected it, he rejected the Cushman school of doctrine from which it sprang. In doing so, DePuy courted the dangers of oversimplification, rigidity, and impermanence inherent in his own school.

Because of the differences between the DePuy and Cushman schools of doctrine, Leavenworth probably could never have written a manual satisfactory to General DePuy. When DePuy wrote "we are teaching, not debating" across the frontpiece of *The Division in the Defense*, he expressed volumes about the differences between the two schools. To General DePuy, one teaches what one knows to be right to others who will then know it also. Major General Cushman would have been surprised to learn that any doctrinal publication written at Leavenworth during his tenure could be interpreted as something less than teaching. The quality of a Leavenworth education was probably his first priority as commanding general of the Combined Arms Center. To him, however, teaching was guiding another's search for truth and reality. To General DePuy, the purpose of doctrine was to teach the Army what to do; therefore, manuals needed to express certainties clearly. To Major General Cushman, doctrine taught by providing the field commander the Army's best available thought on combat operations as a guide to that commander's approach to a particular operational problem. In the absence of compromise, no officer grounded in one school could write doctrine that an officer of the other school would find satisfactory, and neither could Major General Cushman.

No Compromise

General DuPuy gave him the opportunity, however. While still at the meeting at Fort A. P. Hill in December, having rejected the Leavenworth draft, DePuy led his subordinates through the writing of an outline for a new draft edition of FM 100—5. He gave this to Major General Cushman with the task of writing from it another draft manual in time for a second meeting in the spring.[14] Cushman did not complete this task, and given his philosophical position, his reason seems clear: he could not. The commandants of the various schools met again with General DePuy at the end of April 1975 to write the manual that Leavenworth could not. Major General Cushman attended but did not participate in the writing.

Apparently, Major General Cushman had forewarned his boss of his inability to complete the task assigned to him because General DePuy came to the meeting fully prepared to have his other commanders and staff officers write a draft of FM 100—5. He had even arranged for a team of clerks and typists from the Administration Center at Fort Benjamin Harrison, Indiana, to support the effort. In his introductory remarks to the meeting, he provided guidance that clearly reflected his school of doctrine. The manual, he said, is to be "coherent . . . simple and direct" and is "to concentrate on principles that are going to help our commanders at company, battalion, brigade, and division level to win." In the interests of simplicity, it is not "to cover every single contingency that could happen on the battlefield" but, instead,

is to make its points logically, clearly, and assertively. Comparing the manual to the training DePuy received in the early days of World War II, when no important messages stood out from the mass of material on which he was trained, General DePuy admonished his officers to emphasize "the simple thrust of each one of these messages that we are trying to get across." Logic, coherence, simplicity, directness, assertiveness, and clarity should characterize the manual because "we are teachers and this is a teaching document."[15]

Working from the outline first drafted in December, General DePuy then assigned each chapter to a small committee chaired by a general officer: Brigadier General Gorman chaired the chapter on the offensive, Major General Tarpley the chapter on the defensive, and General DePuy the chapter on intelligence. The three-day meeting consisted of alternating writing periods and briefings to the general officers on work completed. At the conclusion of the meeting, DePuy instructed Gorman to collect all the draft chapters and take them back to Fort Monroe for completion, thereby officially relieving Cushman of the writing task and moving the proponency for the manual up three levels of command—from the Department of Tactics, U.S. Army Command and General Staff College, Combined Arms Center, Fort Leavenworth, to Headquarters, U.S. Army Training and Doctrine Command, Fort Monroe.[16]

In retrospect, these two meetings at Fort A. P. Hill were important points in the U.S. Army's post-Vietnam experience. The transfer of proponency meant that the published doctrine that appeared in the field; that dictated the schooling of officers and noncommissioned officers; and that undergirded the Army's research, development, and procurement activities would reflect the DePuy school of doctrine and tactics and not the Cushman school.

The Higher Politics of Developing Doctrine: The Germans and the U.S. Air Force

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General DePuy's transfer of responsibility for FM 100—5 from the Combined Arms Center to Headquarters, TRADOC, resulted from more than a professional dispute with Major General Cushman, however profound their disagreements may have been. If the DePuy-Cushman clash pushed the manual toward Fort Monroe, other forces were also pulling in that direction. Two of these were TRADOC's ties to the West German Army and the U.S. Air Force's Tactical Air Command (TAC). For military and bureaucratic reasons, DePuy wanted the manual to be consistent with the doctrines of both of these institutions. To achieve such consistency, he needed personal control over the manual's development and therefore moved the project to Fort Monroe. Once the manual was complete, he could then use German and Air Force concurrence as leverage to gain the Army's acceptance of the new manual. This pattern of events was less DePuy's deliberate and premeditated plan than it was his response to the increasingly complex task of articulating doctrine for the Army. TRADOC's collaboration with the West Germans and the Air Force not only directly influenced FM 100—5 but also illustrated the political nature of that task.

The Influence of German Doctrine

The U.S. Army's collaboration with the German Army was a natural result of the two nations' strategic situations in the early 1970s and the growing importance of the Federal Republic of Germany to the NATO Alliance. With the withdrawal of U.S. forces from Vietnam in 1973, the German Army's only mission—the defense of NATO Europe—became the U.S. Army's first-priority mission. In Europe, U.S. Seventh Army was second in size only to the West German Army and shared that army's mission in an army group composed of forces from both nations. Collaboration between Seventh Army and its German hosts in operational concepts and tactical doctrine was therefore imperative. Cooperation at the national level was just as important because the bulk of U.S. combat units in the continental United States would reinforce NATO in any crisis.

Like the Americans, the Germans were undergoing a major reorganization of their armed forces between 1971 and 1975 as they attempted to reconcile *Ostpolitik* and the increasing costs of defense in a structure that

met their obligations to NATO.[1] Furthermore, in dealing with the problems of conventional, mid-intensity warfare, the U.S. Army turned to the Germans for expertise because of their World War II experience and their exclusive focus since then on defeating Warsaw Pact armies. For these reasons, early in his tenure as chief of staff, General Abrams established a close relationship with General Horst Hildebrandt, his West German counterpart. Moreover, and important to note, General Abrams directed the TRADOC commander to develop closer, more formal relations than had previously existed between the U.S. Army—as distinct from U.S. Army, Europe (USAREUR)—and the *Deutches Heer.*[2]

The links to the German Army that General DePuy forged took three forms. First, he established close personal relationships with members of the German High Command. Second, these personal ties formed the basis of a series of exchanges and high-level annual talks on doctrine, training, and equipment that, in turn, produced joint concept papers on matters of mutual concern.[3] Third, the two armies exchanged doctrinal literature. Specifically, the German manual HDv 100/100, *Command and Control in Battle*, was a standard reference for the American officers who wrote FM 100—5, including Generals DePuy and Starry. General DePuy also sent drafts of FM 100—5 to the Germans for comment.

General DePuy, by personal inclination, was the right man for this job. He had admired German tactical competence since World War II and frequently referred to German methods of warfare in his talks on tactical doctrine.[4] When in 1974 the German High Command suggested a closer U.S.-German dialogue on a bilateral basis, which precipitated General DePuy's trip to Europe immediately after the Octoberfest conference at Fort Knox, General DePuy welcomed the opportunity. He returned to the United States quite impressed with German *Panzergrenadier* tactics and with a plan for continued collaboration.

That plan specified that exchanges between the two armies should be informal and unstructured, with high-level officers meeting at least annually. By not formalizing the high-level talks, DePuy believed that the Army would not create the false impression of disregarding the NATO structure and seeking bilateral contacts instead. The first high-level talks should emphasize tactical concepts as a prelude to a discussion of weapons and should identify areas of mutual interest for further, detailed investigation. As both parties agreed on concepts, they could then discuss equipment. Among the topics that might be included in an agenda for the first talks were employment of antitank guided missiles, use of armored and mechanized infantry on the central front, and suppression of enemy air defense weapons by ground and air forces—in other words, the very issues that were of immediate concern to TRADOC in the wake of the October War.[5]

General Frederick C. Weyand, who succeeded General Abrams as Army chief of staff in September 1974, accepted DePuy's recommendations and transmitted them nearly verbatim to General Hildebrandt, who also accepted them.[6] Simultaneously, General DePuy invited General Fritz Birnstiel, chief

of combat arms in the German Army staff, to the United States to present a series of lectures on *Panzergrenadier* doctrine to the combat branch schools. So eager were the Germans for this relationship to develop that not only did General Birnstiel come but General Hildebrandt himself initiated the high-level talks with a visit to the United States at the end of April 1975, just at the time of the second meeting at Fort A. P. Hill. These personal visits continued over the following two years and had a direct influence on the writing of FM 100—5.

The German connection was important to TRADOC's development of FM 100—5, both in substance and in a political sense. Substantively, the Germans helped clarify DePuy's ideas about mechanized infantry tactics and defensive doctrine and provided a contrasting approach to tactical cross-reinforcement and Army-Air Force cooperation. Politically, DePuy would use German acceptance of the principles written into FM 100—5 as an important device for gaining acceptance of those ideas within the U.S. Army.

One of the most important influences the Germans had on General DePuy and, subsequently, on the doctrine that appeared in FM 100—5 and its associated manuals was what the Germans called *Panzergrenadier* tactics. The term originated in World War II when Adolf Hitler in 1942 redesignated all German infantry regiments as grenadiers, including those motorized regiments organic to German armored or panzer divisions. More than just a name distinguished these soldiers, however, for they were an integral part of the panzer division concept. Equipped whenever possible with armored, half-tracked carriers, these soldiers theoretically could accompany tanks and participate closely in the tank battles. Unlike other infantrymen, they attempted to remain in their vehicles most of the time so as not to hamper the mobility of the division, dismounted only briefly, and attempted to fight only with the support of the heavy weapons on their carriers. Their primary missions in World War II included eliminating light antitank guns manned by enemy infantry, clearing obstacles that the tanks could not cross, and assaulting pockets of resistance bypassed by the tanks.[7]

The Americans copied the German style into their armored infantry battalions in World War II and retained the term "armored infantry" into the 1960s. However, the adoption of enclosed armored personnel carriers in the late 1950s, the Reorganization Objective Army Division (ROAD) reorganization of 1963, the separation of doctrinal proponency between Forts Benning (for infantry) and Knox (for armor), and especially the war in Vietnam all conspired to dilute American understanding of the essence of *Panzergrenadier* tactics, which had been the union of tanks and armored infantry in a single concept of mobile warfare.[8] Meanwhile, the Germans had not lost their understanding. When they reconstituted an army in 1956, they organized nearly half their forces into armored infantry brigades and acquired the Hispano-Suiza 30—a fighting vehicle, not a carrier—as the rifle squad's transportation.

General DePuy became interested in German ideas about *Panzergrenadier* tactics after the October War. That war had demonstrated the need for

close cooperation between tanks and infantry in order to defeat infantry armed with antitank guided missiles. The Israeli solution of allowing their infantrymen to fight from armored vehicles for as long as possible was consistent with DePuy's beliefs about combined arms and suppression. DePuy endorsed this in a letter to General Abrams reporting on the principal lessons of the war.

The Israeli solution had been an expedient that the immediate conflict demanded, and their use of infantry in this manner had been primarily offensive. The Germans, on the other hand, not only had pondered the role of armored infantry for years but had articulated a concept of its employment that was thoroughly consistent with the defensive mission of their army. Further, in 1971, they had acquired an infantry fighting vehicle, the Marder, successor to the Hispano-Suiza 30, with which to execute the concept. This thorough understanding of the *Panzergrenadier* concept had impressed Major General Starry during his visit to Europe in the spring of 1974 and had prompted him to point out to General DePuy that, unlike U.S. mechanized infantry, German *Panzergrenadiers* were the responsibility of the German armor school.[9]

In the spring of 1974, the term "*Panzergrenadier*" began to appear in DePuy's correspondence and public remarks. After his visit to Germany in October 1974, he became an open advocate and invited General Birnstiel to the United States to lecture on *Panzergrenadier* doctrine in early December. The outline of FM 100—5 that DePuy and his officers wrote at the first meeting at Fort A. P. Hill directed that "*Panzer/panzergrenadier*" forces be described in the section dealing with types of forces. In February 1975, DePuy made German *Panzergrenadier* doctrine the centerpiece of his address to the graduating class from the Infantry Officers' Advanced Course at Fort Benning. In April 1975, he wrote to General Weyand, "[German officers perceive] that the U.S. Army did not understand or practice *Panzer/Panzergrenadier* tactics . . . [but] TRADOC, in conjunction with FORSCOM, is now *changing* our doctrine (tactics and techniques) to conform with the German. Basically, we are involved in moving from a 'Dismounted Infantry' oriented doctrine to an 'Armored' doctrine with the Infantry, Artillery, and Air Defense in support. . . ."[10] DePuy was certain of this report's accuracy because he had signed it on the same day that he convened the second meeting at Fort A. P. Hill, at which he took proponency for FM 100—5 away from the Combined Arms Center. At that point, TRADOC was indeed changing, or attempting to change, the Army's doctrine.

General DePuy was inspired by German *Panzergrenadier* doctrine and used the term to communicate to others his similar ideas about combined arms. No less important to his thinking and the doctrine he wrote was the German emphasis on the defense. Operational compatibility with the West Germans required accepting the primacy in their doctrine of forward defense of the inter-German and Czechoslovakian borders. German operational concepts grew from this strategic imperative and influenced TRADOC's own study of defending while outnumbered. That effort yielded the defensive doctrine that appeared in FM 100—5 and came to be known as the "active defense."

"Forward defense" meant that any Warsaw Pact attack on NATO via the Federal Republic of Germany would be met and, hopefully, contained by conventional means along West Germany's easternmost frontier. The doctrine of forward defense derived from the strategy of "flexible response" adopted by NATO in 1967, which required an early and aggressive conventional defense to buy time and thus raise the nuclear threshold. The military difficulties of detecting and deploying against such an attack in time notwithstanding, the doctrine was politically imperative because it assured the West Germans of NATO's commitment to defend their country and not just use it as a battlefield, as a defense in depth would appear to do. The NATO Defense Planning Committee implicitly accepted forward defense when it endorsed a report on alliance problems for the 1970s (the AD 70 Study) in May 1971.[11] The German government, in turn, formally expressed its commitment to forward defense in a comprehensive strategic concept adopted in August 1973.[12] Then, in September, the German Army published its operational doctrine in HDv 100/100, the manual that Generals DePuy and Starry and their staffs used as they wrote FM 100—5.[13]

German operational doctrine for the defense as expressed in HDv 100/100 was clearly a derivative of forward defense and the heart of all German doctrine. The manual's first page noted that wars of aggression are illegal, that NATO is a defensive alliance aimed at deterring aggression, and that "forces of high *defensive* strength are an indispensable political means to preserve the peace [emphasis added]."[14] Later, the German manual stated clearly that "the task of the land forces is to protect friendly territory against enemy attacks on land."[15] Defensive doctrine had pride of place in the manual over offensive doctrine, being addressed in chapters 27, 28, and 29, whereas offensive doctrine comprised chapters 30, 31, and 32. Lastly, forward defense was implicit in the statement, "The purpose of the defense is to hold a certain area against all attacks, thus preventing the enemy from advancing into a region to be protected."[16] Since land forces were to protect friendly territory, and all of West Germany was friendly, a forward defense logically resulted.

The German operational concept for defending forward asserted that "with fire, [the defender] can achieve a superior effect against the enemy who is compelled to move, can exploit all cover against enemy fire and coordinate to a large degree fire, obstacles and movements. If the defender succeeds in effectively weakening the attacker in this way, and confronting him repeatedly with new situations, he can even achieve decisive successes against a numerically superior enemy." In order to confront the enemy repeatedly with new situations, the Germans stressed thorough preparation of terrain, flexibility to allow rapid shifting of the main point of effort, organization in width and depth, a willingness to take risks in some sectors in order to concentrate in others, and if possible, the deployment of mobile forces in an aggressive delaying action forward of the defensive area to buy time and determine the attacker's main effort. Since the most desirable outcome was to repel the attack "as far forward as possible [and] even in front of the defensive area," the manual stressed that "the annihilation of enemy tanks is of decisive importance."[17]

This German concept resembled the active defense that TRADOC—and especially the Armor Center—developed in 1975 and that appeared as chapter 5 of FM 100—5. The resemblance was not coincidental. As TRADOC officers wrote FM 100—5, they actively sought German ideas and used English versions of HDv 100/100. More important, General DePuy took a direct role in their work, and his position on the German doctrine was clear: "I am personally a great supporter of the German concept of forward defense . . . we want to emulate the Germans."[18]

By October 1975, Headquarters, TRADOC, had produced a draft of FM 100—5 that emulated the Germans, especially in its discussion of mechanized infantry and its concept for the defense. During a three-day conference in Germany at the end of October, General DePuy briefed the German High Command on the FM 100—5 draft. German officers, in turn, briefed the TRADOC entourage on HDv 100/100, after which the two parties examined the similarities and differences of the two documents. They then discussed helicopter employment, main battle tanks, antitank operations, night vision devices, mine and countermine warfare, artillery rocket systems, battlefield reconnaissance, air defense, battlefield identification friend or foe, and the tactical use of smoke. General DePuy asked his host, Lieutenant General Rudiger von Reichert, vice chief of staff of the West German Army, to study FM 100—5 in detail and to provide comments. Returning to the United States, DePuy declared the meeting an "unqualified success" that promised future collaborative efforts. More important, "no important differences" existed between the doctrine in HDv 100/100 and the FM 100—5 draft manual: "We understand the mission of defending forward along the international border in the same way. Our general concept for the conduct of defensive operations is to all intents and purposes the same. The principles of defense tactics and techniques are the same. . . ."[19]

Much was the same, and yet differences did exist between the manuals. First, the Germans believed that U.S. doctrine called for too much cross-attachment of infantry platoons with tank companies, tank companies with infantry battalions, and so on. U.S. doctrine prescribed that an independent commander needed a combined arms capability. Further, the active defense called for concentrating at the decisive place and time by moving battalions laterally from one brigade to another. In the German view, this combat tailoring diluted tank forces, which must remain concentrated for decisive action such as the counterattack. To the Germans, the brigade was the most important level of command on the armored battlefield. All German heavy brigades had their own tank and armored infantry battalions. Thus, the German brigade was a permanent organization; except in special circumstances, the Germans did not cross-attach units below the brigade level, that is, they would not normally exchange battalions between brigades, companies between battalions, or platoons between companies. General DePuy did not think that this difference would have adverse consequences, especially if cross-attachment between German and U.S. units took place only at the brigade level.

A second significant difference between the two armies' doctrines was the degree to which each relied on and cooperated with its respective air force. The Germans did so to a much lesser degree than the Americans and, therefore, sought weapons and equipment that would allow their army to conduct reconnaissance and to attack targets deep (sixty to seventy kilometers) within the enemy zone. General DePuy replied that, beyond fifty kilometers, the U.S. Army would depend on the Air Force to conduct reconnaissance and attack targets and that the Army "would prefer to spend our money on . . . systems of more direct application to the closer-in battle."[20]

These differences did not erode DePuy's confidence that he and his German counterparts agreed about operational and tactical doctrine. In early January 1976, Lieutenant General von Reichert wrote to DePuy: "It is welcomed that our respective tactical concepts coincide in principle, especially our doctrine of an active and mobile defense which makes antiarmor operations the centerpiece of all tactical and technical considerations." The German Army's discussion of the draft FM 100—5 "did not center around what is in [the] draft or anticipated in chapters not written" but whether the manual was sufficiently comprehensive and detailed. This critique vanished when the TRADOC liaison officer to the German Army staff explained that FM 100—5 was a capstone manual to an entire series of manuals that supplemented it. On 2 February 1976, General DePuy expressed his confidence to Lieutenant General von Reichert: "You can see that our conversations in October have borne fruit . . . I believe we can fight shoulder to shoulder under the concepts now set forth in your 100/100 and our 100—5. . . . I see no reason to delay the publication of 100—5. . . ."[21]

The talks between General DePuy and the German Army leaders in 1975 and 1976 were as important to establishing TRADOC's authority within the U.S. Army as they were to developing substantive doctrine. Because General DePuy acted as the Army chief of staff's personal representative, he could conduct talks directly with the German High Command instead of through one of its subordinate offices or headquarters. The Germans therefore perceived DePuy as acting with authority for the whole U.S. Army. Despite the formality of including a USAREUR representative in all the talks, TRADOC was displacing that headquarters as the principal link between the two armies at the national level. This was particularly evident when, in early 1976, TRADOC assumed control of the network of U.S. liaison officers to the German military schools formerly controlled by the U.S. European Command and initiated several joint equipment development ventures for which the German Army staff shared responsibility with a TRADOC agency. TRADOC was a key participant in a joint training conference between the German Army and USAREUR at Grafenwöhr, Germany, in November 1976, at which a U.S. battalion from USAREUR demonstrated the TRADOC-designed active defense to the satisfaction of German observers. By the time TRADOC distributed FM 100—5 in December 1976, the German Army looked to TRADOC, not USAREUR, for the latest word on

how American soldiers would train and fight. When General Alexander M. Haig Jr., the new supreme allied commander, Europe, expressed to General DePuy his reservations about the emerging doctrine, DePuy countered that Haig was "ignor[ing] the German origins of a great part of that doctrine" and advised him to "be aware of its almost total coincidence with that of our German allies."[22] Thus, not only was the German contribution substantive to U.S. doctrine, but their collaboration was an important device for persuading the rest of the U.S. Army of the doctrine's legitimacy and, by extension, of TRADOC's authority in doctrinal matters.

The TAC Connection and Air-Land Battle

Less important to the publication of FM 100—5 in 1976 than the German connection, but of lasting significance to the Army's emerging vision of future war, was the relationship General DePuy established with the Tactical Air Command of the U.S. Air Force. The relationship gave currency to the term "Air-Land Battle," first officially mentioned as the title of chapter 8 of FM 100—5 in 1976 and destined to become the centerpiece of U.S. Army doctrine. Here again, DePuy carried out the directions of Army Chief of Staff Abrams, who ensured through agreements with the Air Force chief of staff that TAC would be as eager for the relationship to prosper as was the Army.[23]

General Abrams' desire for closer relations with the Air Force emanated from his service in Vietnam and from his perception that, in a period of fiscal retrenchment, the two services must avoid internecine quarrels that could jeopardize each other's budget. As recently as 1972, Congress had stopped funding the Army's development of the Cheyenne advanced attack helicopter because the Air Force insisted that it was to perform the Air Force mission of close air support of ground troops.[24] The Army saw the Cheyenne as vital to its ability to shift antitank combat power rapidly on the battlefield and made a similar helicopter one of its "Big Five" procurement priorities for 1973 and beyond. General Abrams did not want that helicopter cut from the budget, nor did he want to suffer the professional embarrassment of arguing openly with another service in a public forum. Fortunately, Abrams' Air Force counterpart, General George S. Brown, agreed. General Brown's career included service in all Air Force missions (strategic bombardment, air superiority, close air support, and military airlift), and most significantly, he had served as General Abrams' deputy for air operations in Vietnam.[25] He was therefore familiar with Army operations and priorities and was likely to welcome greater collaboration between the two services.

Achieving such collaboration was among the initial missions that General Abrams gave General DePuy as TRADOC's first commander. Assisted by the close proximity of their respective headquarters at Fort Monroe and Langley Air Force Base, both in Virginia, DePuy and General Robert J. Dixon, the TAC commander, brought their two commands into close cooperation, if not complete doctrinal harmony. The Air Force never challenged the basic ground combat doctrine of FM 100—5 and, therefore, was able to

contribute to Army doctrine in many marginal areas such as electronic warfare, airspace management, and air logistics. More important, TRADOC-TAC cooperation sprang from a realization, greatly enhanced by the 1973 October War, of the mutual interdependence of the two services.

The October War implied that the nature of Army-Air Force tactical cooperation in future mid-intensity warfare would be significantly different from what the two services had experienced in Vietnam. The enemy would use his own air force to contest control of the skies over the battlefield. He would possess a sophisticated and highly flexible air defense system. The battlefield would be fluid. There would be little time for the detailed coordination procedures that had characterized ground-air operations in Vietnam. Compounding the problem was the fact that air operations were more critical to ground force success, or even survival, than they had been in Vietnam, but were not possible unless both the ground and air forces worked together to eliminate enemy air defenses. This meant that the Army now played a significant role in the Air Force air superiority campaign. The October War did not raise these issues for the first time (the TAC-TRADOC initiative was under way before that conflict), but it did portray them in the most vivid and compelling terms. General DePuy wrote into an early version of the draft concept paper that "air defense suppression in concert and collaboration with the U.S. Air Force is now one of the most important problems facing the ground commander."[26]

General DePuy clearly understood that the need for air defense suppression and the Army's commitment to airmobility and the attack helicopter in an antiarmor role demanded closer cooperation between the Army and the Air Force. He also recognized that a clear definition of tactical roles was necessary for fiscal reasons. Explaining the U.S. Army's greater reliance on the Air Force for missions beyond fifty kilometers into the enemy's zone, General DePuy told his German counterparts that "we . . . would prefer to spend our money on Army systems of more direct application to the closer-in battle." He then repeated the point specifically to General Dixon: "My personal view is . . . that the Army must concentrate its resources on the proximate battle area. We don't have enough money to duplicate Air Force systems—in fact, we don't have enough money to do what we need to do on the immediate battlefield."[27]

Driven by a recognition of the need for greater operational collaboration, a sense of urgency prompted by the October War, and a desire to conserve available funds for highest-priority service missions, TAC and TRADOC began learning how "to fight better, not each other."[28] Agreeing early that their joint work should concentrate on procedures and not doctrine per se, the two commanders identified airspace management, air defense suppression, reconnaissance and surveillance, electronic warfare, close air support, and air logistics as their primary concerns. General DePuy further identified the Army and Air Force interests by the ranges of their weapons systems. By this scheme, the Army would have the stronger voice in matters directly related to the battle within five kilometers of the front line, which was the maximum range of Army direct-fire weapons and therefore the most crucial

to ground fighting. The Air Force would have the stronger voice in matters relating to the battle beyond fifty kilometers and outside the range of nearly all Army systems. The battlefield between five and fifty kilometers would be a mutual concern.[29]

The process by which the two services worked together took three forms. First, to ensure a common understanding of the future battlefield environment, TRADOC invited TAC to participate in the construction of scenarios. Second, for each area of mutual interest identified by the two commanders, they established a joint working group of officers from both services to investigate that interest and prepare a working paper that would identify specific problems and recommend solutions. The joint working groups coordinated their papers with affected Army and Air Force commands. In some areas, these papers were the bases of joint manuals approved by and applicable to both services. In 1975, the several joint working groups came under the supervision of a new organization, the Air Land Forces Application Agency (ALFA), located at Langley Air Force Base, but were supervised by an Army colonel from the TRADOC staff. Third, General DePuy and General Dixon met several times to review the status of ALFA activities.[30] All this work received the periodic endorsement of the Army and Air Force chiefs of staff.[31]

TAC-TRADOC collaboration reflected the two services' recognition of their mutual interdependence in modern warfare and their need to establish commonly understood procedures for cooperation in a variety of tactical functions. An important first step was to develop a common vision of the future battlefield, a step taken as the Air Force participated with the Army in developing scenarios at Fort Leavenworth. Implicit here was the growing realization that combat on land was not an autonomous activity sometimes supported by air operations but that ground and air operations were integral, inseparable parts of the whole effort to apply force against and defeat the enemy. Inspired by Major General Cushman, who wrote about air-ground integration as early as 1965, officers at Fort Leavenworth began to use the terms "air-land" and "air-land battle" to express this idea. While the component parts of air-land battle (air defense, tactical air support, and airspace management) were not new problems to officers of either service, a heightened consciousness of their importance and the difficulties inherent in synchronizing them with traditional missions of both services suggested the need for a new, three-dimensional concept of the battlefield. Thus, Major General Cushman included a chapter titled "Air/Land Operations" in the draft of FM 100—5 that he prepared for the first meeting at Fort A. P. Hill, implying that this new concept was as important to the Army's thinking about warfare as were the concepts of offense, defense, and intelligence, the subjects of other chapters. Cushman described the inherent problems of the air-land battle concept: "The basic problem facing the air and land commanders is to work together so that each part of the air/land force can operate to its full potential without needlessly restricting the operations of any other part. The combined air/land battle force that solves this problem best will most likely prevail."[32]

Major General Cushman's version of FM 100—5 did not survive that first meeting, but ideas about air-land battle did. Using a team composed of officers from the USACGSC student body, CACDA, and the TAC liaison office to CAC, Cushman prepared a briefing on the air-land battle concept and presented it to TAC and TRADOC staff officers in March and April 1975. The concept posited a corps-size Army element with appropriate Air Force support in a scenario set in the Middle East and attempted to portray a "conceptualization of the integrated Air-Land tactical battle." Despite some initial misgivings by the TAC staff members, Major General Cushman and his team briefed Generals DePuy and Dixon on 10 April 1975.[33]

DePuy and Dixon expressed reservations about the concept. They believed the concept implied a misuse of tactical air support assets, calling for flights of two aircraft for missions requiring a hundred. Furthermore, they doubted that the joint combat operations center called for in the briefing would work. They sent the briefing team back to Fort Leavenworth with a new set of instructions for developing the concept further and postponed staff work on a proposed joint memorandum of agreement on air-land battle.[34]

Major General Cushman's concept of air-land battle did not become an agreed-on doctrine of the U.S. Army and Air Force in the spring of 1975, but the reasons transcend Generals Dixon and DePuy's reservations expressed at the briefing. First, the TAC staff officers who heard the prebriefing were not enthusiastic about the concept from the beginning. They believed it dealt with too many specific details, required decisions from the TAC commander that he was not yet prepared to make, and reflected a misunderstanding of the current Air Force Air-Ground Operations System. These misgivings, combined with the reservation that the concept misused tactical aircraft, suggested considerable Air Force opposition to the concept.

Second, Cushman did not have DePuy's full confidence in the spring of 1975. One almost feels the clash of the two men's personalities in the brief notes recording the instructions given the briefing team after their presentation: "Reorient [the] effort to align with substantive problems: Winning the war tomorrow . . . Europe present forces . . . Limited to defense suppression." Finally, what Cushman suggested to DePuy and Dixon was a substantive change in doctrine, and they had agreed to coordinate procedures only, not doctrine.

This last point is a fine one because, as we have seen, all parties agreed on the component issues of air-land battle. However, Major General Cushman was urging that both services agree that these issues constituted the core of battle as it would occur in the foreseeable future. Purely air or ground roles would be the exception and would take second priority to articulating the doctrine and equipping, training, and fielding the forces necessary for the air-land fight. For this reason, a joint task force commander of either service needed his own combat operations center with which to control the unified battle on the ground and in the air, to include controlling the assets of both services. Neither service was yet willing to go that

far because, to do so, could require significant redefinition of service roles and apportionment of assets. By rejecting Cushman's air-land battle concept, Generals DePuy and Dixon agreed on a safer, more productive approach: tacit acceptance of two arenas of battle, one on the ground and one in the air, each the primary province of a respective service, and explicit acknowledgment that the two arenas are mutually interdependent, leading to procedural, but not doctrinal, collaboration. Rather than serving as a platform for doctrinal revolution, the TAC-TRADOC dialogue of the mid-1970s reflected an unprecedented degree of Army-Air Force cooperation in peacetime.

The Effects of Collaboration

Throughout the writing of FM 100—5 from 1974 to 1976, TRADOC collaborated with the West German Army and the U.S. Air Force Tactical Air Command. In both cases, the format of the talks followed a pattern set by General DePuy: working groups focused on specific areas of mutual interest to agree on concepts first, coordinated and spurred on by periodic meetings between General DePuy and a counterpart of equivalent rank and authority. This collaboration substantively influenced the doctrine written into FM 100—5. German ideas about forward defense meshed with TRADOC's emerging active defense. The Germans' *Panzergrenadier* heritage helped General DePuy articulate the armor doctrine he believed the U.S. Army must adopt. Collaboration with the Air Force influenced the manual in marginal but nonetheless significant areas: the chapters that dealt with modern warfare, intelligence, and electronic warfare were consistent with the thinking and operational procedures of TAC. Although the Air Force was unwilling to endorse air-land battle as a definitive doctrinal concept, the close Army-Air Force collaboration helped generate within the Army a new way of thinking about future battle that would persist. Signifying the Army's interest in this new concept, the new manual, when published, addressed suppression of enemy air defenses, close air support, and airspace management in a separate chapter titled "Air-Land Battle."

TRADOC's dialogues with the German Army and TAC reveal not only some of the sources of the doctrine contained in FM 100—5 but also something about the process of doctrinal development within TRADOC at the time. If the format of the talks reflects DePuy's highly personalized executive style, it also helps to explain it.

General DePuy believed that the chief of staff of the Army expected him to coordinate the Army's doctrine with the German Army and TAC. Gaining consensus between three bureaucracies as large as TRADOC, the *Deutches Heer*, and TAC was no easy chore. Without persistent command attention, initiatives easily could have disappeared into a maze of interested agencies and superior and subordinate headquarters. DePuy prevented this from happening by keeping all the work keyed to a schedule of meetings between himself and his general officer counterparts. For these meetings to be effective, DePuy had to be able to speak authoritatively for the Army and make binding decisions.

To have decentralized the writing of FM 100—5 to a subordinate headquarters would have involved yet another player in the process and would not have worked unless the subordinate headquarters commander thought exactly as DePuy thought and enjoyed his confidence. Major General Starry came as close as anyone within TRADOC to meeting these criteria, but for the Armor School commandant to write the Army's key doctrinal statement would have been inappropriate. Major General Cushman, as commanding general of the Combined Arms Center, was in the only appropriate position, but he did not have DePuy's confidence. Therefore, General DePuy elected to supervise personally the writing of FM 100—5 at TRADOC. Not coincidentally, he made this decision at the second meeting at Fort A. P. Hill in late April 1975, just as the dialogue with the Germans entered a critical phase with General Hildebrandt's and General Birnstiel's visits to the United States and just as the Air Force was expressing its displeasure with air-land battle.

Whether it was wise to allow an ally and a sister service to have a strong influence over the Army's official thought about warfare is another question. Doctrinal consistency with the Germans, for instance, required some form of forward defense whether or not a forward posture was the best available thought on defensive operations for the U.S. Army. Conversely, whether or not air-land battle was a good idea, it was meaningless without the Tactical Air Command's concurrence and participation and so would not become Army doctrine. To General DePuy, there was little point to a doctrine that was inconsistent with the ideas of other forces on whose success one's own depended. Doctrine had to deal with realities, and the realities to General DePuy were that the Army's most important mission was in NATO, that that required consistency with the Germans and the Air Force, and that the Army simply lacked the time and resources to prepare extensively for contingencies elsewhere in the world or to steer its own course doctrinally, independent of the cooperation of TAC. General DePuy kept a firm hand on doctrinal development within TRADOC to ensure the retraining of the Army in an armor doctrine, preserve the Army's investment in new weapons, and ensure consistency with the Germans and TAC. He could then use their concurrence as a powerful argument with which to persuade others that the doctrine in FM 100—5 was legitimate. Certainly, no one could say in the mid-1970s that those two institutions were irrelevant to the U.S. Army's ability to perform its primary mission. All of this clearly reflects General DePuy's school of doctrine and underscores that doctrinal development is in part a political process. And yet this very fact posed problems. Considering the global scope of the Army's mission and the diversity of its possible opponents, one might argue that a doctrine wholly consistent with that of the German Army and the Tactical Air Command was a liability.

TRADOC Writes the Manual

In April 1975, General DePuy moved the responsibility for FM 100—5 from the Combined Arms Center to Headquarters, U.S. Army Training and Doctrine Command, partly because of his dissatisfaction with CAC's efforts and partly because of his desire to make the Army's capstone doctrinal statement consistent with agreements reached with the Tactical Air Command and the West German Army. From then on, General DePuy personally supervised the writing of the manual at Fort Monroe, working closely with a small group of trusted assistants whom he designated the "boathouse gang." Writing parts of FM 100—5 himself, he also strictly controlled contributions from outside TRADOC headquarters, especially the material about the active defense. Meanwhile, the branch schools began work on the follow-on tactical manuals, especially the "71" series on combined arms.

By October 1975, DePuy was able to brief the Germans on the new doctrine from a preliminary draft of FM 100—5. He assembled his commandants at Fort A. P. Hill for a final edit of the manual in November, and by December 1975, the manual was close to publication. FM 100—5 was not so much a product of an institutional process as of the highly personalized bureaucratic style of William E. DePuy. It reflected DePuy's personal beliefs about combat and the Army and his penchant for detailed systems analyses. While writing the manual, DePuy became convinced that what had started as a quick fix to reorient the Army's training had become a major overhaul of the Army's doctrine that would last for years.

The Army Loses Abe

General DePuy's relative autonomy in 1975 was partly due to the death of General Creighton W. Abrams, chief of staff of the Army, in September 1974. General Abrams approved the Steadfast reorganization, appointed DePuy as TRADOC's first commander, and designated TRADOC as the Army's executive agent for improving relations with TAC and the West German Army. Abrams also selected Major General Starry as commandant of the Armor School and approved the selection (at General DePuy's urging) of Major General Cushman for command of Fort Leavenworth. A hero of the Battle of the Bulge, General Abrams earned wide respect within the Army as General William C. Westmoreland's successor in command of U.S.

forces in Vietnam and especially for his handling of the U.S. military withdrawal from that country. A man of great personal authority, Abrams was also keenly interested in TRADOC and General DePuy's initiatives in systems analysis, training, and combat developments, especially as they affected his personal determination to glean more usable fighting strength from the Army's 785,000 soldiers.

Much of what TRADOC did in 1974 and 1975 was done in General Abrams' name, although he provided little guidance after April 1974 when he became terminally ill. General DePuy believed that he and General Abrams thought alike about tactics and that he was implementing a program largely approved by General Abrams. DePuy always informed Abrams of his plans and intentions, and his correspondence with General Abrams reflected a deference appropriate to their subordinate-senior relationship. General Abrams, after all, not only was the Army's chief of staff but was five years senior to DePuy and had held four-star positions in Vietnam when DePuy was a brigadier general and then a major general.

DePuy's close relationship with the Army's chief of staff did not continue after Abrams' death. General Frederick C. Weyand succeeded General Abrams, but Weyand did not have the same interests, seniority, or personal stature as Abrams. Weyand and DePuy had been peers in Vietnam, Weyand commanding the 25th Infantry Division while DePuy commanded the 1st. General Weyand was not as personally interested in TRADOC's activities as General Abrams had been. General DePuy conscientiously reported to his new superior, but his reports stressed accomplishments rather than plans. Perhaps most telling was DePuy's informal style in dealing with Weyand. DePuy always addressed General Abrams as "Dear General" and signed his full name. His letters to General Weyand began "Dear Fred" and ended with "Bill."[1]

Doctrine, Weapons, and Budgets

General Abrams was vitally concerned with eliminating waste and redundancy within the Army in order to get maximum combat strength from the Army's allocation of manpower, and he also worried about modernizing the Army in a time of limited funding. He passed these twin concerns on to his successor and to subordinates like General DePuy. When DePuy served as assistant vice chief of staff of the Army, he participated directly in preparing and defending the Army's budget requests before the Department of Defense (DOD), which was notorious for submitting nearly all proposals to rigorously skeptical cost-effectiveness analyses. DePuy learned in Washington that such analyses were often the key to obtaining the resources needed by the Army. When DePuy assumed command of TRADOC, he was determined to provide the Army with the sort of analytical data it needed to support its modernization program. To do this, he intended to rationalize doctrinal and equipment development into a single process. This systems analysis approach to warfare, with emphasis on justifying the Army's investment in new weapons, was why, in 1973, he created scenarios as a

major analytical device. Moreover, it pervaded the doctrine that he and his assistants wrote into FM 100—5 throughout 1975.

Under the Steadfast reorganization plan of 1973, TRADOC was to assume responsibility for the Army's old Combat Developments Command, which had performed the Army's experimental work in both battlefield techniques and equipment. However, USACDC reported directly to the Department of the Army and so had little formal connection to the Army schools that developed doctrine. TRADOC was to bring the doctrine and materiel development functions together.

To do this, General DePuy had given each branch school commandant combat developments responsibilities and had initiated standard scenarios as common frameworks for all new doctrinal or materiel testing. An important part of each scenario was its description of expected enemy (usually Soviet) weapons, forces, and tactics. New ideas were to be expressed in a formal document called a Required Operational Capability (ROC). The ROC specified the new idea in terms of what its authors wanted to be able to do in a given scenario. It further explained why the Army required this new capability. TRADOC forwarded approved ROCs to the Army Materiel Command and the Department of the Army and then began a detailed "Cost and Operational Effectiveness Analysis" (COEA) that attempted to find the optimum changes to current Army doctrine, organization, and equipment that would realize the new idea. Ideally, this process generated the necessary data to defend the cost of Army modernization because it considered anticipated costs as a factor in determining the best solution to an operational problem. To support this process, the TRADOC deputy chief of staff for combat developments maintained contact with a host of agencies capable of performing sophisticated and automated analyses, especially the Combined Arms Combat Developments Activity at Fort Leavenworth.[2]

This TRADOC organization sprang from DePuy's perception that important DOD officials believed that the Army "[doesn't] know what we need and [has] no orderly process by which to develop our needs."[3] Hence, the Army was in danger of losing DOD support for the most important new items in its budget, especially the "Big Five" items identified in the Army's fiscal year 1973 budget proposal as critical to Army modernization: a new main battle tank, a mechanized infantry combat vehicle (MICV), an advanced attack helicopter, a new troop-carrying assault helicopter, and a new short-range air defense missile system.[4] DePuy believed that the Army could not convince DOD or Congress that these weapons were needed unless the Army could demonstrate clearly that they would improve the Army's overall combat capabilities. Therefore, detailed analyses within one or more scenarios were required. To be effective analytical tools, these analyses had to begin with a concept of capabilities and develop into a comparative analysis of different doctrinal and materiel solutions.

These analyses had been designed to measure trade-offs between different weapons systems. After the October War flooded the Army with data about Soviet-style weapons and doctrine, the Army's tendency was to look

to quantified analyses of weapons systems for tactical inspiration as well. Reinforcing this tendency was TRADOC's focus on "fighting outnumbered," which became a question of making one's own weapons account for more than the enemy's. Indeed, an important TRADOC staff member stated that what General DePuy meant by developing tactics was to "look at present doctrine, recent military experience . . . , data on enemy weapons, then ask: what should our tactics be?" By deriving tactics from a comparative analysis of enemy and friendly weapons systems, one was basing tactics on "cold, hard facts," thus taking their development "out of the abstract."[5]

A good example of how this union of doctrinal and materiel developments defended the Army's budget requests was communicated in General DePuy's April 1975 letter to General Weyand on the MICV, which had been in the development process since 1964.[6] The Army awarded the Food Machinery Corporation of San Jose, California, a 29.2-million-dollar development contract in the fall of 1972, but production delays; deficiencies in the suspensions and transmissions of early MICV prototypes; and doubts about the vehicle's main armament, a 25-mm automatic cannon called Bushmaster, caused considerable criticism of the vehicle within DOD. In December 1974, TRADOC completed a COEA that satisfied DOD concerns about the Bushmaster, but doubts about the vehicle still lingered.[7]

These doubts bothered General DePuy because they indicated that "we have failed to break through a strong prejudice against MICV which doesn't seem to be susceptible to our tactical, technical or cost arguments." One argument was that the MICV was essential so the Army could adopt an armor doctrine that was similar to German doctrine and appropriate to a mechanized battlefield characterized by highly lethal modern weapons and numerical superiority of the enemy. On such a battlefield, the Army would require its infantry "to support tank-led combat teams by: long-range suppression of enemy anti-tank weapons, or suppression of the same enemy capability while the MICV is moving cross-country with tanks . . . , or delivery of a high volume of close-in overwatching suppressive fire in support of dismounting infantry . . . , and [be able to] defeat the [Soviet] BMP beyond the range of [its] 73mm gun, and be able to fire an ATGM from the deck, and protect against automatic weapons fire." The Army's current armored personnel carrier, the M113, DePuy asserted, could not do these things. The MICV would cost less than what the Germans paid for their Marder or what the Soviets paid for their BMP. "Therefore, we must win this one [because it was] one of those issues that goes to the heart of the Army's capability. . . . We must miss no occasion to impress upon Secretary [James] Schlesinger the direct connection between the MICV and the tactics we must adopt to fight alongside our German allies. . . . As you can see, I don't want to see the Army lose this one."[8]

General DePuy did not see the Army "lose that one," partly because by moving responsibility for FM 100—5 from Fort Leavenworth to his own headquarters at Fort Monroe, he linked the Army's development of doctrine directly to its development and analysis of weapons systems. To DePuy, such linkage was important, even critical, in bureaucratic disputes over the

budget. "TRADOC . . . is now *changing* our doctrine . . . [which is] the *central* issue behind the MICV," wrote General DePuy in his April letter to Weyand. If TRADOC's COEAs were the Army's most important proofs of its budget requirements and if those analyses were based on a TRADOC concept of how to fight, then that concept had to be Army doctrine, not just in TRADOC war games theaters and in the minds of TRADOC analysts but as published in manuals, taught in the schools, and used in the field. Otherwise, the whole purpose of rationalizing combat developments, training, and doctrine under a single headquarters would be lost. Because TRADOC supported Army weapons acquisitions with highly specific and technically detailed weapons systems analyses based on a concept of how to fight, General DePuy could not tolerate a nontechnical, philosophical approach to doctrine such as Major General Cushman's. Nor could DePuy afford to have the concepts that supported his analyses fail to become the published and accepted doctrine of the entire United States Army. The necessity to defend the budget drove General DePuy to codify as Army doctrine the concepts that underlay TRADOC's analyses.

The Active Defense

One concept that DePuy incorporated into FM 100—5 using the systems analysis approach was the active defense. This term was used first by General DePuy and then by the entire Army to refer to a doctrine based on defending NATO Europe against the superior numbers of the Warsaw Pact. Written into FM 100—5 as chapter 5, this concept created controversy within the Army. Its origins reflected the influence of the German Army, TRADOC's penchant for grounding doctrine in analytical data, and the primacy by 1975 of General DePuy and his selected assistants in the promulgation of doctrine.

Since the early 1950s, Army defensive doctrine had posited two types of defense, a "mobile" defense and an "area" or "position" defense.[9] The mobile defense focused on destroying the attacking force with armored formations in a fluid battle, while the area defense focused on retaining ground with infantry supported by preplanned artillery fire. As American officers considered the problem of defending Europe in the immediate post-Vietnam years, they sensed that neither the mobile defense nor the area defense as prescribed in then-current manuals was appropriate because there were insufficient U.S. forces in Europe to defend the U.S. sector in that manner. In fact, neither U.S. corps then deployed in Europe was using either form of defense.[10] A new doctrine appropriate to the extended division frontages and the numerical superiority of the enemy that the Army faced in Europe seemed necessary.

An early post-Vietnam attempt to grapple with these problems came from the Infantry School at Fort Benning as the so-called "force-oriented defense." Designed to "reduce the attacker's combat power to a manageable ratio," this concept called for mechanized infantry forces to fight a "battle of attrition" across successive "attrition areas" in preparation for a decisive counterattack by armored forces. The concept appeared to be an Infantry

School effort to retain its Vietnam-era primacy as the Army's focus shifted to Europe. The concept did not survive scrutiny by General DePuy, who declared that it had "no standing in TRADOC."[11]

Soon after assuming command of TRADOC, General DePuy ordered the Combined Arms Combat Developments Activity at Fort Leavenworth to construct the standard scenarios needed for the systems analysis approach. One was a European scenario that focused on the problem confronting the U.S. V Corps along the inter-German border near Fulda. Working with this scenario, Fort Leavenworth hosted a series of defense conferences in 1974, attended by representatives from the Forces Command and the Tactical Air Command, to examine the problem of defending the Fulda sector in light of the lessons learned from the October War. By November 1974, the European scenario had precedence over the other seven scenarios as a basis of TRADOC analyses, and Fort Leavenworth appeared to be leading the Army's examination of its defensive doctrine.[12]

Meanwhile, at Headquarters, TRADOC, Brigadier General Paul F. Gorman, the deputy chief of staff for training, while incorporating into the ARTEPs and training circulars the tentative lessons of the October War, became interested in the problem of fighting outnumbered. In January 1974, he drafted and circulated within TRADOC a paper titled "How to Win Outnumbered." This paper attributed the Israeli victory over vastly larger forces to Israel's ability to achieve superior "tank exchange ratios" in battle, which was due to the high quality of Israeli tank crews. Because Israeli crews were more cohesive and more skillful than their Arab opponents, Israeli tactics and tank gunnery were better, and they killed more tanks than they lost. Further, these Israeli strengths gave them greater confidence, which resulted in their taking greater risks on the battlefield. Conversely, the more cautious Arabs not only failed to realize the combat potential of their superior numbers but, apparently, were more prone to panic when their seemingly overwhelming numbers did not prevail. Panic, mediocre crew quality, and massed formations made Arab tank forces highly vulnerable to superior Israeli gunnery and yielded exchange ratios as great as 1 to 50 in some battles. This "mathematics of melee," according to Gorman, had profound implications for the training and career management of American tank crewmen.[13]

The focus of Gorman's paper was on "training and doctrine: what is to be taught, and how it shall be taught."[14] In dealing with that problem, he had expressed the essence of the problem confronting Army planners since the withdrawal from Vietnam, that is, "how to win outnumbered." He had taken a systems analysis approach to the data of the October War to find an answer. The ideas in Gorman's paper, wedded to some of General DePuy's long-standing tactical convictions about suppression and combined arms, appeared in the defense portions of DePuy's July 1974 draft concept paper with an even greater weapons systems flavor.

That document stated that "the basic concept of the defense is to optimize the employment of one's own weapons—to exploit every conceivable advantage of the terrain to minimize one's own vulnerability—and to estab-

lish a system of mutually supporting weapons positions and actions which anticipate and defeat the attacker's plans and actions."[15] The paper called for a defense against tanks to be "built around the anti-armor/anti-tank weapons system" and then discussed U.S. antitank weapons in terms of range, accuracy, and rates of fire. Artillery fires were important in this concept because they could suppress enemy "overwatch" positions and forward air defenses and could reduce the effectiveness of attacking tanks by "33 percent." This latter task was sufficiently important to deserve the dedication of "a certain amount of artillery . . . at least during the critical phases of the action."[16]

DePuy's draft concept paper implied, but did not specify, that the defender would have to be very mobile. Major General Starry at the Armor School remedied that. In May 1974, General DePuy ordered that the Armor and Infantry Schools work together on developing doctrine for armored and mechanized infantry at the company and battalion levels.[17] Subsequently, a team from Fort Benning visited Fort Knox in August 1974 to brief Starry on a "strongpoint defense" built around fortified nests of antitank guided missiles. Major General Starry "had great problems with it" and took over the briefing to "talk Starry on defense."[18] While no record of his talk remains, one can surmise the essence of it from a letter on "the purpose of the tank" that he had sent to Major General Gorman less than a month earlier. In that letter, Starry stated that, "in defensive operations, the closer one can construct the battle to resemble an attack, the greater advantage can be taken of the tank's most sanguine capabilities. That is, the defense should be designed to lure or canalize the enemy onto ground of our choosing—preferably a reverse slope, where a brisk tank counterattack wipes him out."[19] In other words, in armored operations, successful defense depended on mobility and positive action by the defender and not just on arraying one's weapons consistently with the enemy's capabilities and the terrain.

When Starry finished his talk to the Infantry School briefing team, he directed one of his staff officers, Lieutenant Colonel David L. Tamminen, to design a manual war game with which to test Starry's concepts against Soviet doctrine.[20] In the next year, the Armor School worked on this project. Tamminen set his war game in the terrain of Hunfeld, Germany, and called the study Hunfeld I. Hunfeld is a small town along the inter-German border near Fulda and in the sector of the U.S. V Corps. Whether intentionally or not, Fort Knox was now competing with Fort Leavenworth for the honor of teaching the U.S. Army "how to defend."

Fort Knox and Major General Starry won that honor. By the fall of 1974, General DePuy relied more and more on the Armor School to lead TRADOC in the direction DePuy desired. This was evidenced by DePuy's choice of Fort Knox to host the critical Octoberfest conference, where TRADOC demonstrated some of its tactical ideas to the field commanders. Starry, in turn, found himself increasingly at odds with Major General Cushman, especially over how to defend in Europe. "I have several problems with the [European] scenario," he wrote to Cushman in October. "The

most important one is that the conduct of the defense is pretty much the same as we have used in the past and it does not in my judgment reflect the lessons of the Middle East War. . . ."[21]

If Major General Starry was distressed with Leavenworth's work, so too was General DePuy. In December, DePuy rejected Leavenworth's draft manual, *The Division in the Defense*, precisely because he saw in it "no connection with weapons effectiveness, suppression, mobility, blocking, etc. . . ."[22] Later that month at the Fort A. P. Hill meeting, General DePuy became convinced that Major General Cushman and his staff did not agree with himself, Major General Gorman, and Major General Starry. DePuy, therefore, rejected Cushman's draft of FM 100—5. When Cushman turned down a second chance to write the manual, the strongest remaining voice on defensive doctrine was Starry's. When General DePuy opened the second meeting at Fort A. P. Hill in April 1975, the first item on the agenda was a briefing on covering force operations in the defense, which was to be given by Lieutenant Colonel Tamminen of Fort Knox and based on his latest study, Hunfeld II.[23]

The ascendancy of the Armor School over other TRADOC schools did not mean that Starry now had carte blanche to write defensive doctrine for the entire Army. Indeed, General DePuy, while at the second Fort A. P. Hill meeting, selected Major General Tarpley of the Infantry School to write the first draft of the defense chapter of FM 100—5.[24] At the conclusion of that meeting, DePuy transferred the project to his own headquarters. Thereafter, DePuy, Starry, and Gorman supervised the work on FM 100—5, including its defensive doctrine. General DePuy's close supervision and involvement in this work reflected that several differences of opinion over how to defend existed between him and Starry.

Starry's concept of the defense, as expressed in a July letter to Gorman, stressed attack and counterattack, a theme he addressed in an article published in February 1975 describing a new defensive concept based on Tamminen's war games.[25] Close to the doctrine published in FM 100—5, this concept organized defending forces into a "covering force area," "main battle area," and "reserves"; stressed deployment of units according to enemy weapons capabilities and doctrine and the defender's inherent advantage to see and prepare the terrain; and implied a battle of falling back along successive positions while inflicting heavy casualties on the enemy. However, Starry emphasized as one of four principles of this defense that "the defender must at some point in the battle seize the single advantage he does not have—the initiative—he must attack. The purpose of the attack is to destroy the enemy. . . ." Task force commanders in the main battle area were to prepare detailed counterattack plans for each of their defensive positions so they could exploit any opportunity to destroy large enemy forces and return to a defensive posture before follow-on enemy echelons arrived on the battlefield. Defensive positions themselves were to be miniambushes that made the best use of terrain for cover, concealment, and weapons siting and allowed the defender to deliver a high volume of deadly fire suddenly on the attacker. Starry's four principles of defense were "threat, terrain,

ambush, and attack. . . . The pervading logic is identical with that which dictated how to operate on the offense."[26]

General DePuy was much more cautious than Major General Starry about the advantages of counterattack. DePuy's draft concept paper had not stressed counterattack as an imperative and had cautioned that such attacks "may well fail" because they give up the defender's inherent advantages. His preference was for "carefully selected blocking positions, which retain the advantage of the defense," implying that counterattack might consist of moving to a position from which one could inflict decisive losses on a temporarily stalled enemy force by fire. Also, "limited counterattacks conducted on reverse slopes fully covered from the attacker's overwatching weapons may also be more effective."[27] DePuy specifically addressed these points at the first meeting at Fort A. P. Hill in December 1974, which Starry attended. The outline for FM 100—5 that DePuy gave Cushman at that meeting listed eight principles of the defense, including the "use of blocking positions versus counter-attack and ambush-like positions."[28] It may well have been Starry's opposition to DePuy on these points as expressed in Starry's February article that caused DePuy to select Tarpley to write the defense chapter at the second Fort A. P. Hill meeting.

However that may have been, after the second meeting and throughout 1975, Starry's approach to the defense was the closest to General DePuy's. Both men saw the problem as one of stopping an onslaught of Soviet armor well forward, and both men took a strong weapons systems analysis approach to the problem. The covering force and main battle area structure of the defense expressed by Starry probably as early as August 1974 was written into the final version of FM 100—5, although a "rear area" replaced Starry's "reserves." Most notably, at the end of the year, Lieutenant Colonel Tamminen published an article titled "How to Defend Outnumbered and Win," based on his continuing war games at Fort Knox, that contained the essence of the "active defense" as it appeared in FM 100—5.[29]

Focusing on covering force operations, Tamminen's article was significant because it intended to convince the reader that the active defense would work. The proof came from meticulous statistical analyses of the simulated battle that showed U.S. forces taking heavy casualties from the enemy's initial artillery bombardment but recovering quickly to achieve a favorable "exchange ratio." The article showed the Americans losing 83 combat vehicles while destroying 297 of the enemy's and concluded that "the covering force can . . . defeat an enemy or series of enemy forces which outnumber it." The techniques used required company commanders to control their dispersed platoons so that none engaged the enemy except during the last few seconds in the time of flight of an artillery barrage called for by the commander. Further, the article asserted that the enemy would not destroy many U.S. vehicles with direct fire because "proper use of the techniques described denies the enemy the opportunity to shoot back at anything." Whether these two ideas reflected a realistic understanding of combat conditions is questionable. However, Tamminen reached the apogee of TRADOC's infatuation with numbers in his conclusion. "The simple math-

ematical fact is: If we are outnumbered 1 to 5, we must have exchange ratios that are higher, or we lose. We cannot spend a tank . . . and get only three or four of the enemy in return. This defense and the techniques that go with it, when properly planned and properly executed, do permit us to defend outnumbered and win."[30]

In addition to the influence of Generals DePuy, Gorman, and Starry and their collective systems analyses bias, the active defense also reflected TRADOC's developing relationship with the West German Army. The Germans said their defense "will be conducted actively." They took as its central problem a defense well forward against superior numbers of tanks attacking according to Soviet doctrine. They organized their forces into brigade "defense areas" similar to TRADOC's "main battle areas" and planned to deploy forces forward of the brigades to perform the same missions as TRADOC's "covering force." While the Germans were more emphatic about holding terrain, their purpose for the defense was to weaken the enemy, thus creating a more favorable force ratio and gaining time. They believed that armor was the weapon of main effort and that all other arms acted in support of tanks, including the infantry who fought mounted. German doctrine stressed firepower in the defense: "The effectivity [*sic*] of the defense rests above all on the systematically prepared and strictly controlled fire of all weapons," their doctrine stated. Elsewhere it declared, "Movements are used to bring weapons within range to deliver fire on the enemy or to remove friendly forces from the reach of enemy weapons." The Germans accepted both DePuy's "blocking positions" and Starry's "mini-ambushes" as workable techniques for small units that would fight from a series of preplanned "positions." They gave forward deployment of units priority over organization of the battlefield in depth and accepted risk in some sectors in order to concentrate "at the point of main effort." Their vision of the "steps" in conducting the defense was identical to TRADOC's: engage the enemy with long-range fire; ascertain the enemy's point of main effort; concentrate fires to stop the enemy well forward, first by shifting artillery and aerially delivered fires and, second, by reinforcing laterally from less threatened areas; and counterattack. All these similarities demonstrated that TRADOC's ties to the German Army had a dramatic effect on U.S. doctrine.

In fact, only three significant differences existed between the defensive doctrine in HDv 100/100 and the active defense in FM 100—5. First, although the Germans concerned themselves with abstract "force ratios," nowhere in their manual did they attempt to quantify these. Very likely, they saw a favorable force ratio as a function of "combat power," which to them included morale, leadership, and other unmeasurable factors. TRADOC was by no means ignorant of these aspects of military effectiveness but tended to think more in terms of actual numbers of weapons systems deployed by both sides on the battlefield.

Second, TRADOC's active defense called for a division commander to concentrate against the enemy's main effort by detaching battalions from some brigades, moving them laterally behind the front and attaching them

to other brigades. The Germans concentrated by shifting brigade boundaries and changing brigade missions but always keeping their original brigades intact.[31]

Third, TRADOC expressed the active defense as one big system manipulated by a few key commanders at corps and division level, much like the war games that undergirded it. Units below division, especially battalions, were essentially pawns to be moved about the battlefield. They had to be thoroughly trained in a number of specific tasks so that, no matter where they were sent, they could execute their part of the mission. This characterization of warfare was in some respects accurate, but it was a major point of emphasis in the active defense.[32] The Germans were not so wholly committed to this systems approach, even though they agreed with the basic structure and conduct of the U.S. concept. Their doctrine declared that, "because of the variedness of combat, tactics—except for general principles and rules—cannot provide any rigid formulas or instructions. . . . Success is ensured only by the free action of commanders within the scope of their mission."[33] Their fundamental "battle concepts" included "resolution and persistence; freedom of action; risk taking . . . surprise . . . [and] deception," as well as more systems-oriented concepts such as "cover and concealment [and] cooperation."[34] Most significantly, rather than focus on closely choreographed responses to the enemy's attack and deemphasis of the counterattack, the Germans expected their defending commanders to "break free of [their] dependence on the attacker and decide the outcome of the battle in [their own] favor."[35]

With the publication of FM 100—5 in July 1976, General DePuy changed the U.S. Army's defensive doctrine from a mobile or position defense to an active defense. This concept bore a strong and deliberate resemblance to German defensive doctrine of the early 1970s, differing from German doctrine only in that the active defense emphasized TRADOC's concern with "fighting outnumbered and winning" and the systems analysis approach to solve that problem favored by Generals DePuy, Gorman, and Starry. The active defense concept was not the result of a collaborative effort. By the fall of 1975, when DePuy briefed the Germans on a final version of the active defense, the U.S. Army Infantry School, the Combined Arms Center, and U.S. Army, Europe, were no longer important participants in the deliberations. The authors of the active defense and of the entire manual were a select group of generals and staff officers from the U.S. Army Armor School and Headquarters, U.S. Army Training and Doctrine Command.

The Boathouse Gang

By 1975, FM 100—5 was the cornerstone project of General DePuy's efforts to refocus the entire U.S. Army on a new type of warfare under new strategic conditions. General DePuy wanted the new manual to support the Army's investment in new weapons and to be compatible with the doctrine of the West German Army and the Tactical Air Command. These factors drove him to assume more and more personal control over the man-

The "boathouse gang" in the summer of 1978: left to right, Major David C. Meade, Major Thomas J. Lawrie, Mr. Louis J. Napoleon, Colonel Edwin G. Scribner, Major William Griffiths, Major Richard R. Guthrie, and Major Lon E. Maggart. Not pictured are Major William G. Carter and Major Thomas P. Carney. The boathouse gang played an important role in DePuy's centralization of doctrine development.

ual's development. Assisting him was a small group of selected officers who actually wrote many of the early drafts of FM 100—5.[36]

These officers had an ambiguous status on the TRADOC staff. Many of them were majors and lieutenant colonels with backgrounds in operations research who had originally worked for Major General Gorman, the deputy chief of staff for training. Indeed, Gorman selected such individuals specifically because they were capable of the sort of analytical staff work that would influence General DePuy.[37] TRADOC's revision of Army doctrine began with Gorman supervising the rewriting of training literature; therefore, these officers caught DePuy's attention. By the fall of 1974, General DePuy was using them as a personal staff, adding to their ranks his own former aides-de-camp and other young officers who particularly impressed him. He eventually transferred these officers to his own staff.[38] Known variously as the "concepts team," the "boathouse gang" (because their office was in a building at Fort Monroe once used as a yacht club), and finally the "tacti-

cal concepts office," these officers were important because they made possible the timely publication of a manual that was satisfactory to General DePuy, a manual that the formal TRADOC structure could not produce.

DePuy used this ad hoc staff arrangement for three purposes. First, the group was a sounding board for his own ideas. Starting with the draft chapters of FM 100—5 from the second Fort A. P. Hill meeting, the concepts team provided General DePuy with modified drafts for his comment. Often, DePuy met with the entire team to discuss his comments or, in some cases, to provide it with drafts he had written, a process that continued until the chapters met DePuy's approval. Second, the team actually wrote in accordance with DePuy's guidance. Third, team members acted as couriers for coordinating the drafts with other agencies, working closely with Major General Gorman to ensure FM 100—5's consistency with Army training and carrying drafts of the manual directly to Fort Knox, Fort Leavenworth, or wherever necessary to gain an interested commander's concurrence or comments. Such trips were always by air, rarely longer than overnight, and always conducted in the name of the TRADOC commander.[39]

The boathouse gang very likely had little direct influence over General DePuy's tactical thinking. The doctrine that appeared in FM 100—5 too clearly reflected DePuy's lifelong tactical preferences and the influences of Major Generals Gorman and Starry, the West Germans, the Tactical Air Command, and even Major General Cushman for yet another group to have had much influence. DePuy's instructions to this selected group of officers indicate that he wanted them to be an extension of his own mind and method and to write doctrine strictly according to his school of doctrine and tactics. In this way, the boathouse gang was a substitute for institutional compromise.

"Don't get too lofty or philosophical," he told them. "Wars are won by draftees and reserve officers. Write so they can understand."[40] Discussing the importance of suppression and fire superiority, he said, "Field manuals should explain to the Blotzes and the draftees that you need superiority of firepower whenever you attack . . . these messages about suppression and fire superiority must be stressed over and over again in the introduction and throughout all chapters of that manual." He warned that he would not accept a manual that "drifts away from the direct, simple message." Fire superiority and suppression were important because they "change[d] the force ratio at that particular place and time," and force ratios were key to winning when outnumbered. This idea was central. "We have to stick to the fundamentals, stick to the arithmetic of the battlefield," DePuy instructed. Showing his concern for the new lethality of the battlefield, he said, "We're starting this war with so few people and so few weapons that we'll be out of business in a matter of days if we don't combat the enemy . . . with cautious smartness while conserving our own forces." One's own forces must be conserved and survive to achieve a favorable force ratio at the decisive place and time and thus win the battle. "Leadership calls for massing on the battlefield," DePuy proclaimed. "Audacity calls for massing on the bat-

tlefield. Use of the Air Force for combat air support calls for massing on the battlefield. Good tactics calls for massing on the battlefields."

If the boathouse gang did not directly influence the substance of FM 100—5, it did organize and express DePuy's ideas so that a manual was ready according to his time schedule. This was critical because DePuy knew the consensus that he had wrought with the Army at large by his Octoberfest conference and that he was building with the Germans and the Air Force was fragile. As he reached agreements, he had to be able to incorporate them into the Army's doctrine directly, and that doctrine had to appear in print soon, while the consensus lasted. Only in this way could the ideas approved at the various high-level conferences he attended become doctrine that would actually influence the fighting Army and help prepare it to win the first battle of the next war. To DePuy, implementation of the doctrine in the schools and in the field as soon as possible was the goal. TRADOC, because of its bureaucratic structure, could not produce manuals in the form or at the pace DePuy desired; therefore, he created his own ad hoc staff to do the job. That staff displaced more traditional participants in the doctrinal process and made possible the highly personalized tone of FM 100—5.

Getting Everyone Aboard

By the fall of 1975, FM 100—5's basic concepts were in place. Central in importance were "fight and win outnumbered," coined by Major General Gorman, and "win the first battle," a Gorman expression for what DePuy had long seen as a strategic imperative. Next was DePuy's idea of the manual as a description of "how to fight" and a capstone to a whole series of derivative tactical manuals that announced to the Army a break with Vietnam and a refocus of attention and energy on Europe. Other important ideas included the primacy of the tank; the centrality of armor and antiarmor warfare; the active defense; an emphasis on weapons systems analyses and force ratios; an appreciation for tactical air power; and a commitment to clear, simple, specific, and assertive language. Satisfied that these ideas were ready for publication and determined to have a final draft manual prepared in time for the Department of the Army Commanders' Conference in December 1975, General DePuy used the fall months to rally support, head off potential opposition, and incorporate some ideas that, until now, had not had his attention.

To DePuy, his key ally was the West German Army. DePuy's most important conference with the Germans was when he briefed them on FM 100—5 in October 1975. DePuy returned from that conference in Europe confident that his and the German concepts were essentially the same, an important preliminary to gaining Department of the Army approval. As important, German concurrence with the TRADOC manual helped prevent any potential opposition from U.S. Army, Europe. USAREUR might object to having an administrative headquarters in the United States dictate how it should fight, but USAREUR could hardly criticize TRADOC's concepts if, in doing so, it criticized its German allies. While DePuy was careful to

work closely with General George S. Blanchard's Seventh Army headquarters, DePuy was clearly most interested in the Germans' point of view. While DePuy was in Europe, USAREUR staff officers suggested that the FM 100—5 draft did not sufficiently address coalition warfare or combat in cities. Since these issues did not threaten the basic thrust of the manual, DePuy happily invited USAREUR to submit draft chapters on each, which he incorporated directly into the final version.[41]

Earlier in October before his European trip, General DePuy addressed another possible source of opposition from within the U.S. Army Forces Command. FORSCOM's concurrence with FM 100—5 was important for the manual to gain Armywide acceptance because all the operational units in the continental United States that would be adopting the new doctrine came under FORSCOM. DePuy had tried to keep Headquarters, FORSCOM, abreast of TRADOC initiatives in doctrine and training, but their relationship was not a close one.

One possible reason for DePuy's concern about FORSCOM in the fall of 1975 was that seven of the eleven divisions subordinate to Headquarters, FORSCOM, were airmobile, airborne, or conventional infantry divisions rather than armored or mechanized divisions. Their officers had close ties to the Infantry School at Fort Benning. Some had undoubtedly served under Major General Cushman when he commanded the 101st Airborne Division. Probably most important, these divisions and their leaders embodied the Vietnam experience with light infantry, airmobility, and deployment contingencies outside NATO Europe. This informal community was likely to resist a doctrine that put armored operations in Europe at center stage and that sought to break with the legacy of Vietnam, especially since the authors of FM 100—5 had excluded both the Infantry School and the Combined Arms Center from the writing process.

To address these possible concerns and to ensure the support of the new FORSCOM commander, General Bernard W. Rogers, General DePuy accepted an invitation from General Rogers in 1975 to host a joint FORSCOM-TRADOC conference on airmobility similar to the Octoberfest conference held at Fort Knox the previous year.[42] The conferees included the Army chief of staff, General Weyand, and high-ranking officers from FORSCOM and TRADOC, the Reserve Components, and major overseas commands. They met at Fort Hood, Texas, on 8 and 9 October to discuss how the Army "as the leader in airmobile tactics in Vietnam [would] keep the advantage internationally."[43] They addressed the tactical movement of troops by helicopters and the use of armed helicopters against tanks in a mid-intensity environment. DePuy later described the origins of this OFTCON (October FORSCOM-TRADOC Conference) as a response to a perception by "certain elements of the Army," including Lieutenant General Robert M. Shoemaker, commander of III Corps and Fort Hood, that TRADOC's initiatives thus far "signalled a retreat from airmobility and too narrow a focus on mounted or mechanized warfare."[44] DePuy declared that the conference and subsequent studies gave TRADOC "confidence in

the role of airmobility on the modern battlefield [and it] stimulated a resurgence of interest in the organization of the 101st Airmobile Division."[45]

This was an important posture for TRADOC to assume given the Army's experience with airmobility. DePuy was not against airmobility, for he aggressively used helicopters in Vietnam and two of the Army's "Big Five" procurement priorities for which he had fought as assistant vice chief of staff were helicopters. However, the October War had suggested to some in the Army that helicopters could not be employed in the face of a sophisticated enemy air defense system.[46] DePuy was cautious about their utility, including in his draft concept paper a detailed discussion of antitank attack helicopters only and deferring discussion of airmobility generally to later versions.

Such caution, combined with the obvious orientation on armor of TRADOC's initiatives in 1974 and 1975, had sent a disturbing signal to the Army's airmobile community. OFTCON was thus primarily a political conference to placate that community before FM 100—5 went to press. It did not bring about any sweeping changes to the manual but probably forced the insertion of several phrases and sections that acknowledged the U.S. Army's continued commitment to world leadership in the use of attack helicopters and airmobility.

A smaller, but no less significant, group within the Army was the tactical nuclear weapons community. So far, TRADOC's focus had been on conventional combat fought similarly to the October War. While fighting a conventional war was the central theme of FM 100—5, TRADOC could not publish a European-oriented doctrine without discussing the employment of tactical nuclear weapons. Therefore, in the fall of 1975, DuPuy brought the Army's small nuclear weapons community into the doctrinal development process.

To gain the needed expertise, TRADOC dealt with the U.S. Army Nuclear and Chemical Agency (USANCA) in the Pentagon and the Nuclear Doctrine, Organization, and Equipment (NUDORE) Study Team, which had been moved from CACDA to USACGSC at Fort Leavenworth.[47] Since Headquarters, TRADOC, had no office to deal with nuclear weapons matters, these two agencies formed a separate community of experts, even though organizationally the NUDORE Study Team was subordinate to TRADOC and USANCA was superior. Such isolation, supposedly necessary due to the high security classification given to nuclear matters and the technical qualifications required of officers to work in either office, meant that nuclear weapons expertise was functionally outside the mainstream of Army doctrinal thinking.

This situation was intolerable to some members of the nuclear community but quite acceptable to General DePuy. Officers involved with nuclear weapons planning believed that the United States enjoyed clear superiority over the Soviet Union in tactical nuclear weapons. The mere existence of a U.S. tactical nuclear capability complicated Soviet planning, while close linkage of tactical weapons to strategic weapons enhanced the deter-

rent capability of Army forces worldwide. Further, nuclear weapons employment was a real possibility for which the Army had to prepare itself thoroughly. According to these nuclear weapons officers, then, tactical nuclear weapons should enjoy equal status with the traditional combat arms (armor, infantry, and artillery) in the development of Army doctrine.[48]

General DePuy did not share this reasoning. To him, the employment of nuclear weapons could not be considered a routine option for Army commanders worldwide because of the stringent controls placed on their use. Furthermore, nuclear warfare was so theoretical that the Army should not build an entire doctrine around a guess, however educated. Clearly, U.S. policy required a conventional defense of NATO Europe in hopes of controlling any conflict below the nuclear threshold. This meant that the Army's conventional capability should take first priority. DePuy perceived that the Army's nuclear weapons community was too eager to make nuclear warfare an attractive option, thus trying to push that doctrine into policy. That was a step DePuy was unwilling to take.

DePuy also recognized other important obstacles to the thorough integration of tactical nuclear weapons with the emerging TRADOC doctrine. First, DePuy wanted wide distribution of FM 100—5 and its derivative manuals. He wanted soldiers of all ranks throughout the Army to study the manuals thoroughly, which would not be possible if the manuals contained classified nuclear weapons information. Second, and more important, DePuy wanted the Germans' continued support for his doctrinal initiatives. U.S. employment of tactical nuclear weapons in Europe was a highly controversial issue in Germany that could have only threatened the relationship he had so painstakingly developed over the past two years.[49]

For these reasons, the draft chapter that the NUDORE Study Team and USANCA prepared did not appear in the final manual. Indeed, by the December Commanders' Conference, which was DePuy's target date for publication, the draft chapter on tactical nuclear weapons still carried a high security classification, requiring DePuy to distribute it to the conferees under a separate cover.[50] To resolve the dilemma, DePuy agreed that tactical nuclear doctrine should appear in FM 100—5—1, a separate, classified manual. FM 100—5 would then contain only a chapter discussing the effects of nuclear weapons, their control, and principles of fire planning. As a concession, the assistant chief of staff of the Army for intelligence agreed to allow publication in that chapter of a previously classified chart showing processing times at each level of command of a request to use nuclear weapons.[51] This chapter, therefore, did not constitute a doctrine for nuclear weapons but treated them "as ancillary to the major concern—the conventional battle against the enemy's first-echelon forces."[52]

Also ancillary to the manual's focus, but critical to any discussion of war with the Soviet Union, was the issue of chemical weapons. Again, matters of classification, technical knowledge, and policy constraints inhibited thorough integration of chemical warfare doctrine with Army doctrine generally. Since President Richard M. Nixon's 1969 renunciation of a U.S. first

use of chemical weapons, the Army had paid little attention to the problem and was on the verge of disbanding its own Chemical Corps. Then, the October War intervened. Modern Soviet equipment captured from the Arabs indicated that the Soviet Union was well ahead of the United States in chemical defense technology and suggested that Soviet preparedness in the offensive use of chemical munitions was a routine part of military operations. The chief of staff of the Army directed a comprehensive review of the Army's chemical warfare posture and that review was in progress as TRADOC prepared FM 100—5.

Perhaps for that reason, General DePuy did not include a discussion of chemical warfare in the early drafts of FM 100—5. Significantly, none of the other TRADOC schools suggested it, which was testimony to the marginal importance attached to the chemical warfare issue. In preparing for the December conference, however, DePuy circulated drafts of the manual to the Army staff and other major command headquarters. One of these drafts arrived in the Nuclear Division of the Office of the Deputy Chief of Staff for Operations, which had staff responsibility for chemical matters as an "additional responsibility." There, a Chemical Corps staff officer noted the absence of any discussion of chemical warfare in the manual and recommended appropriate changes.[53] In a classic example of the hazards of bureaucratic suggesting, Headquarters, TRADOC, had no one with the necessary background to make such an addition and so requested that the officer who originally made the suggestion be tasked to prepare a draft chapter on chemical warfare. The officer obliged, and his draft appeared as chapter 11 of the final manual. Similar to chapter 10 on tactical nuclear weapons, chapter 11 discussed U.S. chemical warfare policies, Soviet chemical capabilities, the effects of various weapons, and some principles of planning, but it did not represent a major doctrinal pronouncement.

The Final Draft

As all the work on FM 100—5 progressed, General DePuy brought the "informal power bloc" together one last time at Fort A. P. Hill to incorporate the results from OFTCON and from his talks with the Germans. On 18 and 19 November 1975, Generals DePuy, Gorman, and Starry rewrote the final drafts of the manual's first six chapters—the heart of the new doctrine—which were titled "U.S. Army Objectives," "Modern Weapons on the Modern Battlefield," "How to Fight," "Offense," "Defense," and "Retrograde."[54] DePuy wrote chapter 1, Gorman chapter 2, DePuy and Gorman chapter 3, DePuy and Starry chapter 4, and Starry chapters 5 and 6. Significantly, Major General Cushman attended the meeting as an observer, but he did not participate in the rewriting. No other general officers attended. This final version was the draft DePuy took to the Department of the Army Commanders' Conference on 10 and 11 December 1975.

DePuy's briefing to the Commanders' Conference went well. "They like it," he reported.[55] He provided each participant with a copy of the draft manual and asked for their comments by 1 February 1976, the date by which he hoped also to have the comments of the West German High Com-

mand and by which he expected to "go in concrete." None of the comments DePuy received significantly altered the doctrine that he, Gorman, and Starry had penned at Fort A. P. Hill in November. Once DePuy received German concurrence in January, the bulk of TRADOC's efforts on the manual shifted to preparing the graphics and illustrations that made such a striking contrast to past manuals. By 1 April 1976, General DePuy was "content . . . that we finally have the doctrine problem in order."[56] On 1 July 1976, his draft of FM 100—5 gained official Department of the Army approval, and the presses began to print it as the U.S. Army's new combat doctrine. This manual, DePuy had told his boathouse gang, "is going to affect the colonels, lieutenant colonels, majors, captains, lieutenants, and sergeants. The impact . . . will be a thousand fold. It will be more significant than anyone imagines. [It] will be *the* Army way and it will show up for decades."[57]

Toward the Best Available Thought

The new 1976 edition of FM 100—5 had an immediate effect on the Army. In July, TRADOC distributed 1,000 copies to the Department of the Army staff, all major command headquarters, each corps and division, and each TRADOC school. In August, another special mailing placed 22,000 copies in the hands of all combat arms commanders down to company level in the Active Army, Army Reserve, and Army National Guard. Then, another 153,000 copies were distributed through normal channels. By September, division commanders in Europe were conducting formal classes for all their officers on the new manual. Meanwhile, Starry, recently promoted and given command of the U.S. V Corps to which he had devoted so much attention, reorganized the general defensive plan of that corps to conform with the new doctrine and convinced the Seventh Army commander, General Blanchard, and the VII Corps commander, Lieutenant General David E. Ott, to do the same.[1] The manual began a doctrinal reorientation rivaled in the U.S. Army's peacetime history only by the adoption of the pentomic division in 1956.[2] General DePuy intended that the manual's distribution be wholesale and abrupt because he was not trying to change a manual but to change the Army. Ironically, that very fact began the process of critique within the Army that led to the manual's demise.

The critique and rejection of FM 100—5 disappointed General DePuy not only because he had identified closely with the manual and had struggled so hard to publish it but also because, to him, it was the centerpiece of a much broader range of activities that marked a "historic turning point" for the U.S. Army. DePuy believed that the Army's increasing dependency on highly sophisticated weapons and equipment and the support services necessary to sustain them signaled the Army's evolution from an organization of people with weapons to an organization of weapons with crews. In this sense, the Army was becoming more like the Air Force and Navy and needed to prepare accordingly. FM 100—5 was a systems-and-weapons-oriented doctrine intended to prepare the Army for its future, which included as a worst case intense conventional battle using many sophisticated weapons and as a best case significant organizational and equipment changes as the new weapons in which the Army had invested became available.[3]

The doctrine in FM 100—5 was deliberately consistent with many other TRADOC initiatives taken to prepare for this future. These included the

publication of an entire "family" of doctrinal manuals; a "division restructuring study" that outlined organizational changes in Army divisions to accommodate the new equipment; continued weapons systems analyses to support Army budgeting and procurement; continued cooperation with the West Germans aimed toward a "unified allied doctrine" and joint development of equipment; continued cooperation with TAC; and a thoroughly reorganized, "criterion referenced," hands-on training program designed to certify regularly each solider's proficiency in the specific skills that defined his role in the larger Army system.[4]

DePuy's willingness to link so many of TRADOC's activities to the doctrine in FM 100—5 shows that he did not anticipate significant challenges. Barring a revolutionary weapons technology breakthrough or a major change to Warsaw Pact forces, a TRADOC briefing paper stated, "this manual should provide adequate guidance for the Army for an extended period of time."[5] DePuy himself told General Weyand, "It will be several more years before 51% of the commanders in the Army—Generals through Captains—operate instinctively in accordance with the principles in FM 100—5. At that time, it will be genuine doctrine."[6] As late as 1979, DePuy listed the development of FM 100—5 and its derivative manuals as one of his three most significant contributions to the Army while serving as TRADOC commander.[7]

The Early Critique

Paradoxically, developing FM 100—5 was DePuy's most important contribution to the Army, yet the manual never enjoyed the instinctive acceptance of a majority of Army officers. This nonacceptance was due in part to the critique of the manual that began almost as soon as it appeared.

Despite early approval of the manual's style and clarity, three major criticisms arose almost immediately:

- The manual placed too much emphasis on the defense at the expense of the offense.
- In stressing force ratios and the destruction of enemy forces, the manual ignored the psychological dimensions of warfare.
- The manual focused too narrowly on combat in Europe to the exclusion of contingencies elsewhere in the world.

Variations of this critique came from many different sources and at different times. One of the earliest came from Supreme Allied Commander Alexander M. Haig in a letter to General DePuy on 10 September 1976. Fearing that officers might tend "to canonize prescriptions based on carefully restricted assumptions" applicable mainly to Europe, Haig wrote that he "would personally like to see . . . a more explicit reminder that in general, the ultimate purpose of any defense is to regain the initiative by taking the offensive." Haig feared that the manual's emphasis on Europe "may induce too narrow a focus on defense for its own sake" and acknowledged that such was not the intent of the manual but a danger inherent in

"focusing on a particular contingency, however crucial." Haig further hoped that the manual could be refined to highlight "the importance of offensive maneuver in destroying an opponent's will—as opposed to his capacity—to fight."[8]

Haig's critique was important because it accurately predicted that a difficulty with FM 100—5 as doctrine might be more a matter of the Army's response to it than what the manual actually said. In essence, not only the substance but also the emphasis and tone were being challenged. General DePuy recognized the subtlety but responded that emphasis was a command prerogative. The manual was essentially a menu that described how to do whatever the commander chose to do.[9] Haig's comments on offensive maneuver were also important. Emphasis on maneuver was not lacking in FM 100—5, as many critics of the manual claimed, but the manual's chapter on offensive operations was not nearly as detailed or sophisticated as the chapter on defensive operations. More important, the manual diluted the idea of the offensive as critical to victory. Destroying the enemy's will to continue was the fifth purpose of the offensive, appearing after destruction of enemy forces, securing terrain, depriving the enemy of resources, and demoralizing him. The manual's guidance on "when to attack" seemed muted: "Whenever [one can] inflict disabling . . . losses on enemy units, neutralize major forces, or accomplish some lesser effect for a specific purpose."[10]

When Haig wrote his letter to DePuy, Starry had been commander of V Corps for seven months. By that time, Starry was discovering that the doctrine did not address all the problems a corps commander would face. This was especially true of the active defense. Although the doctrine was helpful for organizing battalions, brigades, and even divisions for the initial defensive battle, it did not help Starry deal with enemy follow-on echelons, which were of great concern at corps level. "I must admit I simply hadn't . . . an answer to [that] in the '76 edition," Starry said much later. "We tackled the tactical problem up forward [but] we kind of brushed aside the operational level considerations, the theater-level considerations. . . . What gelled it for me was being a corps commander."[11]

Within a short time of the manual's publication, important Army elements were not satisfied with it, and between 1976 and 1981, other important criticisms emerged. The active defense, modeled against a Soviet "breakthrough" attack, did not account for a perceived change in Soviet offensive doctrine from a massed "breakthrough" penetration in successive echelons to a "multipronged" offensive designed to keep the defender off-balance and then to exploit any weak spots in his defenses with an "operational maneuver group" held in reserve. In emphasizing battle at and below division level, the doctrine in FM 100—5 did not adequately address the operational level of war, that is, the conduct of campaigns by corps and higher to bring about decisive battles on favorable terms. With its emphasis on weapons, firepower, and force ratios, the manual seemed to imply an "attrition strategy" rather than a supposedly superior "maneuver strategy." Finally, the manual seemed to be founded on statistical analyses rather

than enduring historical principles. As a case in point, the 1976 edition of FM 100—5 was the first edition since 1949 to exclude the historically derived "Principles of War."[12]

General Starry, who succeeded DePuy as TRADOC commander in 1977, wrote that "no Army manual has ever been so widely commented on, debated and, to a large extent, misunderstood." General DePuy, who had retired, acknowledged in 1980 "that some of the doctrine set forth in 100—5 has not taken hold throughout the Army in the manner intended."[13] By then, the wide-ranging critique of FM 100—5 was coming together as an effort to revise the manual. Revision gave way to replacement, and in 1982, the Army published an entirely new manual that not only addressed all the points of criticism that had emerged but took a wholly different approach to warfare. Combat was not fundamentally a matter of weapons systems integration, although that was important, but a matter of will and wit. Accordingly, the 1982 manual did not set out to describe "how the U.S. Army destroys enemy forces" but, rather, "how the Army must conduct campaigns and battles in order to win."[14]

Ironically, the critique and rejection of FM 100—5 was in part a response to the measures DePuy took to ensure that the Army *would* accept it as doctrine. Because he wanted to have a dramatic effect on the Army, which he perceived as essentially unprepared for a dangerous future, he purposely drew much attention to the manual, both directly by publishing it in an eye-catching format and by flooding the Army with copies of it at one time and indirectly by tying all TRADOC's training initiatives to the doctrine. Because the manual had command emphasis and was available, attractive, and easy to read, the Army's officers read it. Not only did they read it and attempt to apply it, but they understood it, thought about it, talked about it, wrote about it, and eventually rejected it. That renaissance of professional discourse might have happened anyway, but it, in fact, did happen in direct response to FM 100—5. For that reason, the manual was a most important contribution to the United States Army.[15]

FM 100—5 and the Doctrinal Process

Doctrine is a product of the bureaucratic politics and personalities of the army it serves as much as it is the objective best available thought about warfare. An army's past, present, and vision of its future always influence doctrine because each is an inherent part of the intellectual process by which armies develop doctrine. These truths are evident in the U.S. Army's formulation of the 1976 edition of FM 100—5.

Even though General DePuy and the other authors of FM 100—5 intended to write a manual that would prepare the Army for its next war, not its last, they could not possibly escape the Army's historical experience. General DePuy's most fundamental ideas about tactics, combined arms, combat leadership, the American soldier, and the U.S. Army came directly from the campaign to liberate Europe from Nazism. He never forgot them and he wrote them into FM 100—5.

The Army's experience in the Republic of Vietnam also influenced the manual, though less directly. DePuy and his assistants feared that Vietnam had been an aberration in the historical trend of warfare and that the Army had lost a generation's worth of technical modernization there while gaining a generation's worth of nearly irrelevant combat experience. They wanted FM 100—5 to announce a break with that recent unhappy past and to focus the Army's attention on the immediate future. They succeeded only in ignoring the Vietnam War but not in expunging its influence. This was most clearly evident at the 1975 October FORSCOM-TRADOC Conference on airmobility but appeared elsewhere as well. The TAC-TRADOC dialogue in part reflected the Vietnam experience of Generals Abrams and Brown. The failure of FM 100—5 to address corps- and theater-level operations may have been an unconscious legacy of Vietnam, a war in which corps and higher headquarters remained stationary and did not "campaign" in the traditional sense. Likewise, the assertive manner in which DePuy presented FM 100—5 to the Army may well have been necessary in an Army that tended to disdain manuals because of their evident irrelevance in the war just completed.

Ironically, no systematic approach to history informed the manual's authors despite the past's inherent influence on their thinking. The Army's World War II experience found its way onto the pages of FM 100—5 through the necessarily constrained medium of one man's memory. The doctrine writers turned away from the battlegrounds of Vietnam with a nearly audible sigh of relief and for reasons that were partly cosmetic. The Korean War, the U.S. Army's most recent experience in classical campaigning, might as well not have happened for all its impact on the doctrine of the 1970s. Had General DePuy recognized that an army's doctrine is inseparable from its past and had he brought the same energy and rigor to the study of that past as he did to the study of weapons and their effects, he might have anticipated some of the weaknesses of the 1976 manual. He might then have written a doctrine that was more persuasive, more credible, more lasting, and ultimately more useful.

If the Army's past strongly influenced FM 100—5, so did its present, the 1973—76 period. That particular time in American history contained conditions to which the doctrine of the U.S. Army responded. Among these were a change in U.S. foreign and defense policy, the Army's fiscal concerns, and the Army's condition in the wake of the Vietnam War.

The most important contemporary condition of the early 1970s was the American withdrawal from Vietnam and the parallel realignment of U.S. foreign and defense policy. If the doctrine focused too narrowly on defense of NATO Europe, that was because the policy of the United States all but specifically prohibited the use of U.S. military forces in any contingency other than meeting its alliance obligations to Japan, the Republic of Korea, and NATO. Of these, NATO not only was first priority but seemed in the worst danger in view of the poor condition of the U.S. Seventh Army and the buildup of the Warsaw Pact forces. The 1973 October War dramatically heightened that sense of danger by suggesting that modern, conventional,

mid-intensity warfare would be dramatically different from what the Army had experienced in Vietnam. This Middle East war further suggested that a European-oriented doctrine could be appropriate in other contingencies as well.

Europe's status as the Army's first-priority mission meant that it was the Army's only mission in practical terms because the Army simply lacked the resources to prepare for much else. Congress planned the post-Vietnam Active Army to consist of 785,000 volunteer soldiers in thirteen active divisions. Only General Abrams' solemn pledge not to exceed that number of soldiers allowed him to increase the number of divisions to sixteen. To create the additional three divisions, Abrams ordered the deactivation of numerous headquarters, support units, and bases. The rising costs associated with the volunteer Army, the drastically increased cost of fuel, and the Army's low budget relative to the Air Force's and Navy's combined to make the Army of the early 1970s cost conscious to a fault.

Such sensitivity to its budget was the second important characteristic to which the Army's doctrine responded in the early 1970s. As TRADOC commander, DePuy was determined to provide the Army with better arguments with which to defend its budget and especially that part of the budget earmarked for investment in new weapons. He proposed to demonstrate the Army's need for each budget item by explaining its role in an overarching concept of how the Army would fight. He then applied rigorous cost-effectiveness analyses within standard scenarios to demonstrate that each item was the optimum balance of costs and capabilities. The Army's need to preserve its investment in new weapons in an era of strict fiscal controls thus prompted the search for an overarching concept, or doctrine, and ensured that the doctrine would have a strong weapons systems emphasis. A doctrine that maximized the potential of every weapon on the battlefield also appeared to maximize the return on every dollar spent on those weapons, a matter of no small significance to an Army with a politically vulnerable budget.

This process of linking doctrinal development closely to weapons acquisition to justify the Army's budget led to difficulties. It began to work backward. What DePuy intended was to derive a concept of how to fight from a description of the enemy threat within a specific scenario and then to identify what the Army needed to execute the concept. This required modeling, expression of variables as numbers, and other routine procedures of operations research. So systems oriented was the TRADOC approach, however, that the analytical expression of the concept displaced the concept itself, first in war games and later in TRADOC publications. Traditional and familiar concepts, such as the principle of war "mass" (concentrate combat power at the decisive place and time), became procedural rules—"achieve a favorable force ratio of not less than 6:1 at the point of decision." FM 100—5 devoted an entire chapter to weapons but less than a page to leadership. A systems analysis idiom pervaded the doctrine.

The systems analysis bias of the 1976 doctrine was a direct response to the Army's fiscal concerns in the early 1970s. It reflected a way of thinking

that Secretary of Defense Robert M. McNamara brought to the Pentagon in the 1960s; that the services thereafter used to identify their budget requirements for weapons and programs; that General DePuy brought with him to TRADOC to better link weapons development to doctrine and training; and that DePuy, Gorman, and Starry then applied to the Army's thinking and official writing about doctrine. General DePuy thought that, in doing so, he was preparing an increasingly systems-oriented Army for its own future while explaining clearly and simply how that Army would fight. Ironically, the Army perceived the doctrine as an oversimplification that paid too little attention to the human dimension of warfare. As DePuy had rejected Cushman's doctrine as too abstract, so too had the Army rejected DePuy's doctrine as too mechanical, too mathematically certain, too specific. The writers of the 1982 manual set out to describe "how soldiers, not systems, fight and win."[16]

The third important characteristic of the early 1970s that influenced the Army's doctrine was the condition of the U.S. Army immediately after Vietnam. Neither defeated nor victorious in that war; misunderstood and unappreciated at home; rent by racial, drug, and disciplinary problems; short of experienced leaders; and in the throes of major personnel policy changes associated with the end of conscription, the Army, like its sister services, was not combat ready. When compared to the requirements of modern mid-intensity warfare as illustrated by the 1973 October War, the condition of the U.S. Army was a crisis that spurred TRADOC's officers to address the Army's doctrine.

First and most obvious was the need to retrain the Army in tactics and techniques appropriate to the new battlefield. The search for these produced the substance of doctrine that appeared in FM 100—5. Second, DePuy, Gorman, Starry, and others believed that the Army's condition could be remedied by intense, quality training focused squarely and without apology on "how to fight." Placing "how to fight" at the top of the Army's agenda seemed a necessary catharsis for the institutional trauma that attended the withdrawal from Vietnam. Third, the condition of the Army lent a sense of crisis and urgency to TRADOC's efforts that supported and seemed to justify DePuy's impatient, unorthodox style, allowing him to dominate the doctrine development process. Finally, confronted with the need to change nearly everything about the Army, its leaders came to recognize the importance of doctrine as a common starting point.

The preceding discussion of the 1976 doctrine as a response to the historical conditions of the 1973—76 period has already suggested the vision of the Army's future that also influenced the Army's doctrinal efforts. All peacetime regular forces retain their professional status within society by looking ahead, attempting to envision and anticipate the military needs of the future, and then preparing accordingly. To their credit, all the major actors in the development of the 1976 manual were doing just that. Their disagreements did not develop so much over what the future held but over what should be done by way of preparation.

To General DePuy, the future had already arrived, and the U.S. Army was unprepared. The Warsaw Pact armies were numerically and qualitatively superior to the U.S. Army, and Third World nations possessed large, sophisticated armed forces. Future warfare would entail conventional battle against a numerically superior enemy with comparable equipment, which could break out at any moment, as it recently had in the Middle East. While war in Europe was much less likely, it was also much more dangerous. Major General Gorman captured TRADOC's vision of the Army's future with the slogans "Fight outnumbered and win" and "Win the first battle," ideas that were central to FM 100—5.

The doctrine in FM 100—5 anticipated another important aspect of the Army's future—the systems and weapons emphasis that made the manual so unpalatable to the Army. DePuy struggled to come to grips with current Warsaw Pact capabilities and tried to articulate a doctrine that would prepare the Army intellectually for the weapons it would use in the future while helping to justify continued investment in those weapons. To him, both problems seemed so acute that he addressed them specifically, exclusively, and assertively. The result was a European-focused, weapons-oriented doctrine that did not withstand critique, especially in light of changed circumstances such as the new Soviet offensive doctrine. FM 100—5 may have failed as a doctrine, but it was successful in focusing the Army's attention on the defense of NATO Europe and technological modernization, two issues bound to be part of its future.

Memories of the past, conditions of the present, and images of the future are all inherent to the intellectual process of formulating doctrine. That process is also inherently political because it seeks to decide which of many competing ideas will become "approved fundamental principles." The writing of FM 100—5 in 1976 was such a political process.

First, the 1976 doctrine was a direct result of the Army's desire to compete more effectively within the Department of Defense for money. General DePuy did not set out in 1973 to seek truth about warfare but to help the Army better preserve its investment in new weapons. Similarly, TRADOC's collaboration with the Tactical Air Command reflected a concern by the Army and Air Force that they had to cooperate on the budget in order to cooperate on the battlefield. If cooperation was desirable, it also had its limits, as TAC's reluctance to endorse "Air-Land Battle" indicates.

Second, General DePuy discovered early that doctrine, rather than just concepts, was an important persuasive tool in the weapons acquisition process. ("If we teach it and we believe it, then we better buy the weapons that make it work.") The Army could make a case for the MICV, for example, if it spoke authoritatively about "how the Army fights" and could show that the MICV was essential to that concept. Speaking authoritatively about how the Army fights was the problem. General DePuy could not ground the Army's case for new weapons in a concept of "how to fight" that was not shared by the Army's field commanders, nor could he train officers and noncommissioned officers in the schools according to ideas that they

would never see again in the field. If TRADOC were to perform what DePuy saw as its two most important missions, the TRADOC concepts would have to be U.S. Army doctrine. This meant that the concepts would have to enjoy consensus and appear in manuals approved by Department of the Army.

This put General DePuy in a difficult situation because building consensus within a complex institution like the Army takes time. General DePuy, undisposed by nature to lengthy debate, believed that the special conditions of the 1970s disallowed that luxury in any case. Adding to his difficulties was the existence of TRADOC as a new organization to which the Army's field commanders did not automatically ascribe authority in doctrinal matters. His response was an impressive exercise in bureaucratic politics. At conferences like Octoberfest, he involved the most influential officers of the other commands in his doctrinal work using persuasion, but also carefully maintaining the initiative in ideas. He used his control of training literature and the curricula of the Army's schools to influence the junior leaders of the Army. He used his close ties to the West German Army as leverage with U.S. Army, Europe. When the FORSCOM commander wanted a conference on airmobility in 1975, DePuy readily agreed not only because he believed airmobility was important to the Army in itself but also because he could not afford to alienate the three- and four-star commanders who supported it. Political considerations were not more important than doctrinal ideas to General DePuy, nor did he have a premeditated political strategy, but the process of expressing a doctrine for the entire United States Army was inherently political and caused him to respond in a political manner.

DePuy's problem would have been difficult enough had it entailed no more than convincing all the Army field commands to adopt a new doctrine, but as commander of TRADOC, he had to work in yet a third political arena—that of his own command. The U.S. Army Infantry School at Fort Benning, Georgia; the U.S. Army Armor School at Fort Knox, Kentucky; and the U.S. Army Combined Arms Center at Fort Leavenworth, Kansas, all vied with each other for the right to describe to the Army how to fight, and each had strong ties to the Army outside of TRADOC. This was no petty squabble for prestige, promotion, and General DePuy's favor, although it had elements of each, but genuine and heated debate over how to fight, how to organize and train, and the very nature of doctrine itself. Starry's "victory" was due as much to DePuy's firm belief that Armor was the most important branch of the Army as it was to Starry's superior skill in political battles with his peers. Cushman's "defeat" was a clear case of an officer who valued the integrity of his beliefs more than he did his career.

The external and internal politics of TRADOC are critical to understanding the development of FM 100—5 and its impact on the Army. The complexity of doctrine development helps explain why DePuy centralized it in his own headquarters. He could not act simultaneously in three political arenas (outside the Army with the Germans and TAC; within the Army with the Department of the Army, FORSCOM, and USAREUR; and within

TRADOC) in any meaningful way unless he could control at least one. Because of the international situation, the condition of the Army, and his belief that binding decisions were required of the TRADOC commander in the other two arenas, he did not believe he had time to build a solid consensus within TRADOC, especially after Major General Cushman confronted him with fairly profound opposition. As substitutes for consensus, he elevated the Armor School to first-among-equals status and created the "boathouse gang"; in the process, he alienated important institutions like the Infantry Center and the Combined Arms Center. This may have been a necessary expedient but was nonetheless shortsighted. It allowed TRADOC to publish a doctrine, largely undiluted by compromise, that addressed the Soviet threat and the lessons of the October War, provided a rationale for funding overdue modernization, and undergirded the Army's training developments, all important and immediate concerns. On the other hand, it ensured that FM 100—5 would be controversial on two counts, first in substance, narrowly based as it was on a statistical analysis of armored combat in Europe, and second in the manner of its promulgation. Hastily written in an assertive style by a select few and then imposed on the Army in blitzkrieg fashion tailored for dramatic effect, the manual was not likely to endure. With the 1982 edition, the Army rejected both the 1976 doctrine and the method that had brought it about.[17]

The political process demanded a man of strong personality as commander, TRADOC, and General DePuy was certainly that. Historical and intellectual currents and bureaucratic politics may define the processes by which ideas become doctrine, but ultimately, individuals make the important decisions. These reflect the unique talents and eccentricities such individuals bring to the job.

DePuy's methods were a personal response to the political environment in which he worked. Centralization of decision making, isolation of opponents, command attention to priority projects, strict adherence to a demanding time schedule, and an aggressive (sometimes abrasive) campaign of persuasion all reflected a command style nurtured since World War II and best described by DePuy himself in 1969: "Decide what has to be done, tell someone to do it, and check to be sure that they do." If the style seemed blunt, it was at least decisive and compensated greatly for a political process that might have caused a different man to compromise too much and write meaningless doctrine. FM 100—5 was not meaningless. It played an important role in the U.S. Army's post-Vietnam history precisely because it was unambiguous, and that was because DePuy overcame the bureaucracy, however controversial his methods.

Because DePuy overcame the bureaucracy, the doctrine he wrote carried a personal stamp. There can be no question that, had Cushman been commander of TRADOC, the 1976 edition of FM 100—5 would have been a wholly different manual. As it was, the manual contained tactical ideas and rested on assumptions about the Army that were clearly, if not solely, General DePuy's.

These ideas show that, in a fundamental sense, General DePuy misunderstood the Army he had served so long. FM 100—5 was DePuy's one-liner on leadership applied to the Army at large. It was a training philosophy applied to doctrine. Having decided what the Army had to do, he used the manuals and schools to tell the Army to do it and ARTEPs and other devices to check to be sure that the Army complied. This technique was applicable perhaps to a battalion of hastily trained draftees in the midst of a major war but not to a large and complex organization. FM 100—5 deliberately described to the Army "how to fight" in language that a drill sergeant might use to train a recruit in the manual of arms. This language tended to alienate an officer corps whose traditions included considerable autonomy to theater commanders, extemporizing in the face of diverse missions, and respect for intelligence and education. The manual succeeded in focusing the Army's energies on some of the problems of a perilous future. DePuy had intended, however, that the Army perform instinctively according to the principles in the manual.

The Army was not likely to do that unless those principles were sufficiently broad, abstract, or flexible to accommodate the Army's wealth and diversity of experience, tradition, structure, and missions. General DePuy's criticism of Major General Cushman's draft of FM 100—5 as too abstract was probably correct; Cushman wrote a philosophy of officer education not a doctrine. Having rejected Cushman's efforts, DePuy erred in the opposite direction and wrote doctrine according to a philosophy of training. FM 100—5 might have been a better doctrine had the two men sought and achieved some compromise and some amalgam of their philosophical approaches. They did not. In the Army, the old adage that the subordinate officer must ultimately comply with his superior or resign is so commonplace that it obscures the corollary: the superior officer must provide the opportunities for compromise. TRADOC failed in 1976 to contend with an important approach to doctrine that might have dramatically improved FM 100—5. The responsibility for that failure rests with William E. DePuy.

The 1976 edition of FM 100—5 was not stillborn. It reflected serious thinking about warfare by experienced, intelligent soldiers grappling with complex military problems. Although it failed as a doctrine because it never gained the Army's confidence, it served the Army well by bringing the importance of doctrine into sharp focus and inducing a renaissance of doctrinal thought.

The manual's failure to gain the Army's confidence was due to its substance and to the manner of its promulgation. The manual focused too narrowly on a European scenario when many in the Army believed that the more probable battlegrounds of the future lay outside Europe. FM 100—5 ran counter to the Army's offensive traditions by muting the decisiveness of the offense and the importance of counterattack in the defense. It failed to provide a conceptual framework from which corps and higher commanders could fashion a credible defense against the Warsaw Pact. It emphasized weapons effects and force ratios and discounted human qualities such as leadership, courage, discipline, inspiration, and motivation, thus implying

that soldiers were ancillary to the weapons they served. Compounding these shortcomings was the manual's dogmatic, tutorial tone that implied rigid adherence rather than thoughtful and selective application.

These weaknesses accurately reflected General DePuy's personal biases and the manner in which he developed the manual. Compelled by a sense of urgency arising from the peculiar conditions of the early 1970s; supremely confident in his own tactical acumen and powers of analysis; unable to make his new organization function as he had intended; beset by difficulties outside TRADOC; and determined to herald TRADOC's several initiatives with a single, timely, justifying document, DePuy, impatient by nature, made the articulation of doctrine a personal enterprise, in effect sacrificing substance for function. He then erred by believing, indeed insisting, that the narrow-based doctrine he espoused was an enduring philosophical foundation for the Army rather than the interim measure it proved to be. His methods discouraged reflection, critique, debate, and compromise. By their very nature, they were unlikely to produce a doctrine that could withstand close scrutiny. In this respect, the writing of FM 100—5 was an example of how the Army should not develop its doctrine.

Ironically, General DePuy's efforts were nevertheless a major positive contribution to the post-Vietnam U.S. Army because he made the officer corps as a whole care about doctrine.

DePuy came to recognize what doctrine should be, that is, an approved, credible, overarching concept of how to wage war that permeates the Army and lends coherence to all its myriad activities. He believed that doctrine should derive from objective analyses of missions and threats and should inform the Army's war planning, force structure, materiel acquisition, training, personnel management, and recruitment in logical progression. The Army's capstone doctrinal statement should be widely understood and relevant to all facets of the Army. Thus, DePuy recognized doctrine as an agent of institutional leadership sufficiently important to be the business of generals and commanders and not just that of the harried manual authors on the staffs of service schools. DePuy strove to make TRADOC the key institution in fact for rationalizing training, force structure, weapons and equipment requirements, and doctrine. Although the manual he produced did not serve these purposes to the satisfaction of the Army at large, it did specify the role that some other manual could play, and it vividly called the Army's attention to the importance of that role. In thus defining doctrine as an issue of central importance to the Army and a key integrating mechanism, DePuy wrought a revolution in post-World War II American military thinking. The subsequent editions of FM 100—5 that appeared in 1982 and 1986 (and those that are likely to appear in the foreseeable future) were attempts to fill the role first put into practice by General DePuy. In that sense, they were evolutionary, however much they may have differed in substance.

The publication of FM 100—5 in 1976 marked an important milestone in the Army's efforts to come to grips with the military challenges of the late twentieth century. TRADOC's efforts to publish the manual help define

the problem of doctrinal change in a modern army with many missions. An army's doctrine is inseparable from its past; therefore, rigorous study of the past is as important to articulating a credible doctrine as is the forecasting of future trends and threats. Doctrine responds to contemporary fiscal, political, social, military, and technological realities. As these change, so must doctrine. Thus, doctrine must be a living body of ideas and not a writ of permanent, inviolable laws. Doctrine is a most important product of an army's attempt to foresee and prepare for the future. The historical orientation necessary to a credible doctrine must be balanced by an equal emphasis on the technology, missions, and environments of the near and distant future. Doctrine is an institutional choice between competitive ideas. As long as an army's doctrine is meaningful, interested parties within and outside the army will attempt to influence it. The army must attempt to mitigate the potential ill effects of this inevitable competition while capitalizing on the energy it stimulates.

Its best hope for doing so lies in the credibility and authority of its Training and Doctrine Command. The TRADOC commander must ensure that the Army's doctrine is in a continual and deliberate state of study, critique, analysis, and refinement to which all other commands and appropriate military and civilian institutions have access. TRADOC must enjoy a reputation for objectivity and balance and must be fully sensitive to the scope of issues influenced by and that influence doctrinal change. TRADOC must maintain firm links to the Army at large at every echelon of command. Finally, the chief of staff of the Army must ensure that doctrinal approval remains the clear responsibility of the Army's highest authorities. Only at Department of the Army level can ideas of how to fight influence how the Army recruits, organizes, equips, trains, mans, leads, plans, and spends. General William E. DePuy's efforts as TRADOC's first commander were imperfect, but to the extent that they provide such insight, they were an important step "toward the best available thought."

Notes

Chapter 1

1. Doctrine is so defined in the course of instruction in military history at the U.S. Military Academy at West Point, New York. A discussion of the role of doctrine is in Robert A. Doughty, *The Evolution of US Army Tactical Doctrine, 1946—76*, Leavenworth Papers no. 1 (Fort Leavenworth, KS: Combat Studies Institute, U.S. Army Command and General Staff College, 1979), 1.

2. Amos A. Jordan and William J. Taylor, *American National Security: Policy and Process* (Baltimore, MD: Johns Hopkins University Press, 1981), 73—76, 341. For the effects of this shift on the Army, see Zeb B. Bradford and Frederic J. Brown, *The United States Army in Transition* (Beverly Hills, CA: Sage Publications, 1973), 21—73; Major Robert A. Doughty and Major Kenneth V. Smith, "The Command and General Staff College in Transition, 1946—1976," 60, Special study project, Terms 2 and 3, Academic year 1975—1976, Department of Strategy, U.S. Army Command and General Staff College, Fort Leavenworth, KS, May 1976, DTIC ADA 030436, hereafter cited as Doughty, "CGSC"; Doughty, *Tactical Doctrine*, 46—47; and Donn A. Starry, "A Tactical Evolution—FM 100—5," *Military Review* 58 (August 1978):3—4.

3. John M. Collins, *American and Soviet Military Trends Since the Cuban Missile Crisis* (Washington, DC: Center for Strategic and International Studies, Georgetown University, 1978); Jordan and Taylor, *Security*, 335—57.

4. Doughty, *Tactical Doctrine*, 40; Starry, "FM 100—5," 3—4; William E. DePuy, Final interview with Brooks Kleber, 23 May 1977, 7, DePuy Papers, U.S. Army Military History Institute, Carlisle Barracks, PA, hereafter cited as USAMHI.

5. U.S. Department of Defense, *National Security Strategy of Realistic Deterrence*, Statement of Secretary of Defense Melvin R. Laird Before the Senate Armed Services Committee on the FY 1973 Defense Budget and FY 1973—1977 Program, February 15, 1972 (Washington, DC, 1972), 59—64.

6. Starry, "FM 100—5," 5.

7. U.S. Department of the Army, FM 100—5, *Operations*, July 1976, hereafter cited as FM 100—5 (1976).

Chapter 2

1. Depuy's description of himself is in William E. DePuy, "Remarks to the Army Museum Conference," mimeographed, 16 April 1974, Historical Office, U.S. Army Training and Doctrine Command, Fort Monroe, VA. This command is hereafter cited as TRADOC in note commentary and short-version citations. Materials from the TRADOC Historical Office are hereafter cited as THO Files. DePuy's impressions of combat in World War II are in DePuy, Transcript of oral history interview with Lieutenant Colonel Romie L. Brownlee and Lieutenant Colonel William J. Mullen, 1979, USAMHI, especially sect. 2, 10, hereafter

cited as DePuy, Interview with Brownlee and Mullen. DePuy's emphasis on dominant leaders and clear, simple, direct orders pervades his career and is especially well expressed in his "11 Men, 1 Mind," *Army* 8 (March 1958):22—60; DePuy, "CG's Remarks at Fort Polk," mimeographed transcript, 7 June 1973, THO Files; and DePuy, Interview with Brownlee and Mullen, sect. 2, 12. DePuy's "Address to Cadets on Leadership" is recorded on Tape RN0632, Special Collections, U.S. Military Academy Library, West Point, NY. During the Fort Polk briefing, DePuy expressed his displeasure with open-faced bunkers and foxholes by telling the audience "they are wrong . . . they are 100% wrong. They will not be tolerated any more. I don't want to see any more of those. That is not right." DePuy, "CG's Remarks at Fort Polk," 14.

2. William E. DePuy, "Keynote Address to TRADOC Leadership Conference, 22 May 1974," mimeographed, 8—10, 13, loaned to the author by Colonel William G. Carter, former aide-de-camp to General DePuy.

3. DePuy, Final interview, 37—40.

4. Ibid., 3; DePuy, "CG's Remarks at Fort Polk," 1.

5. Joe I. Abrams, *A History of the 90th Division in World War II* (Baton Rouge, LA: Army and Navy Publishing Co., 1946), 5; Gordon A. Harrison, *Cross-Channel Attack*, U.S. Army in World War II (1951; reprint, Washington, DC: Office of the Chief of Military History, U.S. Army, 1972), 401—3; Russell F. Weigley, *Eisenhower's Lieutenants: The Campaign of France and Germany, 1944—1945* (Bloomington: Indiana University Press, 1981), 98—101.

6. Harrison, *Attack*, 404, 416.

7. Abrams, *History*, 15—18; Weigley, *Eisenhower's Lieutenants*, 125, 370.

8. Abrams, *History*, 30; DePuy, Interview with Brownlee and Mullen, sect. 2, 19—27.

9. DePuy, Interview with Brownlee and Mullen, sect. 1, 21—27.

10. Weigley, Harrison, and Abrams all agree on the blundering performance of the 90th Division in the Normandy fighting that preceded the breakout. DePuy emphasized the futility of frontal attacks in DePuy, Interview with Brownlee and Mullen, sect. 4, 1—2; and sect. 6, 15. That DePuy abhorred such attacks while on active duty as a general officer and favored an indirect approach to an enemy's position is evidenced by the quote from his "Address to Cadets on Leadership."

11. DePuy, Interview with Brownlee and Mullen, sect. 1, 26—27; sect. 2, 8—10, 29—30; sect. 3, 12; and sect. 4, 10. Weigley found evidence that DePuy was not the only American to understand the blend of suppressive fire and maneuver. He quotes volume 1, page 118, of the *1st U.S. Army Report, 20 Oct 43—1 Aug 44*: "Move forward aggressively. The German is a poor marksman under the best conditions. In the face of heavy fire and an aggressive enemy, his fire becomes highly ineffective." Weigley, *Eisenhower's Lieutenants*, 128.

12. DePuy, "CG's Remarks at Fort Polk," 4—5; and DePuy, Interview with Brownlee and Mullen, sect. 2, 11; and sect. 3, 10—11, 13.

13. DePuy, Interview with Brownlee and Mullen, sect. 2, 16; and sect. 3, 14—15.

14. Ibid., sect. 3, 9—13.

15. DePuy, "CG's Remarks at Fort Polk," 1, 4; and DePuy, Interview with Brownlee and Mullen, sect. 4, 10.

16. DePuy, Interview with Brownlee and Mullen, sect. 2, 21—27. DePuy recounts that, on at least one occasion, he took the principle of specific orders to squads to an extreme by walking along a river bank and personally ordering each squad into its boat for crossing, threatening some with a pistol. Ibid., sect. 2, 22.

17. Hamilton Howze, "Fire Support Techniques—Notes on the Training of an Armored Division," *Armor* 63 (March—April 1954):34—40.

18. The term "overwatch" appears in Hamilton Howze, "Notes on the Training of an Armored Division," *Armor* 62 (November—December 1953) through 63 (September—October 1954). See especially "Fire Support Techniques," *Armor* 63 (March—April 1954). DePuy, "CG's Remarks at Fort Polk," 5, 10; and DePuy, Interview with Brownlee and Mullen, sect. 4, 26. DePuy may have been influenced by Howze because he sensed that Howze shared his own outlook on soldiering. DePuy described Howze in 1974 as "a man obsessed with training. He knew more about all the details than anyone else. Single-minded and humorless, but by God, he was devoted and focused." DePuy, "Keynote Address," 10.

19. Doughty, *Tactical Doctrine*, 18—19.

20. DePuy, "CG's Remarks at Fort Polk," 5; William E. DePuy, Extract From a Guest Speaker Presentation to the Infantry Officer Advanced Courses at the U.S. Army Infantry School on Thursday, 13 February 1975, mimeographed, 21 February 1975, loaned to the author by Colonel Carter; and DePuy, Interview with Brownlee and Mullen, sect. 4, 36—37.

21. DePuy, "CG's Remarks at Fort Polk," 14; DePuy to Secretary of the Army Martin R. Hoffman, 18 December 1975, 1, DePuy Papers; and DePuy, Interview with Brownlee and Mullen, sect. 4, 26—27. It would be wrong to imply that DePuy had no experience in Asia. Between his two tours in Germany, he worked for the Central Intelligence Agency in Southeast Asia but has not discussed that part of his career. His command experience in the Army had all been in Europe. DePuy, Interview with Brownlee and Mullen, sect. 4, 21.

22. These techniques were common to many units in Vietnam and are described in Doughty, *Tactical Doctrine*, 36; and John H. Hay, *Tactical and Materiel Innovations*, Vietnam Studies (Washington, DC: Department of the Army, 1974), 13. DePuy discusses them in his Interview with Brownlee and Mullen, sect. 6, 1—3. For a description of DePuy applying them, see William Beecher, "A Day With 'The Big Red One,' " *The National Guardsman* 21 (February 1967):2—7.

23. DePuy, Interview with Brownlee and Mullen, sect. 6, 1—3; and DePuy, "Address to Cadets on Leadership."

24. DePuy, "Keynote Address," 5; DePuy, Interview with Brownlee and Mullen, sect. 2, 34; and sect. 6, 13—14; and DePuy, Commanding General's Remarks at Fort Sill, OK, 19 June 1974, 2—3, THO Files. As commander of 1st Infantry Division, DePuy's emphasis on weapons siting can be inferred from the following account: "When I [DePuy] visited that battalion . . . I knew that it had been deficient rather consistently in the attention that it paid to the tactical sitings of its defensive position. . . . I personally climbed down in every defensive position [of one company] and I found that about 10 meters in front of these defensive positions was a berm. . . . That company had a field of fire of 10 yards. This was not a single episode but it was the culmination of a lack of attention to the things that keep soldiers alive in war. It was the last of many, but it was gross. I relieved the battalion commander then and there." DePuy, "Address to Cadets on Leadership."

25. DePuy, "CG's Remarks at Fort Polk," 3—4.

26. The two lieutenant colonels were William Tuttle and James Edgar. DePuy, Interview with Brownlee and Mullen, sect. 7, 21—25.

27. A useful study of Operation Steadfast is Major James A. Bowden, "Operation STEADFAST: The U.S. Army Reorganizes Itself," Student research paper, U.S. Marine Corps Command and Staff College, Quantico, VA, 1 April 1985.

28. DePuy did not know whether he would command either of the new headquarters while he was involved in the study and did not know he would command TRADOC until the late winter of 1973, a year after he submitted his recommendations to the secretary of defense. DePuy, Interview with Brownlee and Mullen, sect. 7, 25.

Chapter 3

1. Secretary of the Army Howard H. Callaway to DePuy, 11 February 1974, DePuy Papers.
2. General Creighton W. Abrams to DePuy, 13 August 1974, DePuy Papers.
3. DePuy, Interview with Brownlee and Mullen, sect. 7, 26—34.
4. DePuy to Abrams (draft), November 1973, 1—3, loaned to the author by Colonel Carter. An example of General DePuy's management headaches: "For the last several months, we have had an excess capacity of 36% in the training centers. We are losing money at the rate of $167,100.00 per week, $724,100.00 per month, and would lose $5,068,700.00 if we failed to make the reduction by the end of the fiscal year. . . . Our concern stems partly from the fact that the military personnel concerned should be reassigned to FORSCOM units . . . and partly from our concern about money and . . . rising fuel prices. At Ft. Leonard Wood alone in the last week our estimate of increased fuel cost has risen by $1,000,000.00 for the remainder of the fiscal year [due to an increase in the price of propane from 8¢ per gallon to 44¢ per gallon]."
5. DePuy to Foster, electronic message, 20 December 1974, THO Files.
6. DePuy, "CG's Remarks at Fort Polk," 1—2.
7. DePuy, "CG's Remarks at Fort Polk," 1—2; and DePuy to General Richard W. Stillwell, 23 July 1973, DePuy Papers. Significantly, DePuy wrote both before the October War of 1973. See also DePuy to Abrams (draft), November 1973, 1; and DePuy, "Remarks to the Army Museum Conference."
8. DePuy, "CG's Remarks at Fort Polk."
9. John L. Romjue, *From Active Defense to AirLand Battle: The Development of Army Doctrine, 1973—1982*, TRADOC Historical Monograph Series (Fort Monroe, VA: Historical Office, U.S. Army Training and Doctrine Command, 1984), 4.
10. Russell F. Weigley, *The History of the United States Army* (New York: Macmillan, 1967), 550.
11. William E. DePuy, CVPR Prebrief, mimeographed transcript of DePuy's remarks to the combat vehicle program review rehearsal at Fort Knox, KY, October 1973, loaned to the author by Colonel Carter.
12. Ibid.
13. U.S. Army Training and Doctrine Command, *Operation STEADFAST Historical Summary* (Fort Monroe, VA, 1976), 283.
14. U.S. Army Training and Doctrine Command, Pamphlet 71—11, *Combat Scenarios* (Fort Monroe, VA, 1973), 1-1. For other information on scenarios, see U.S. Army Training and Doctrine Command, *SCORES Historical Summary* (Fort Monroe, VA, August 1975). Nowhere did DePuy express these ideas more clearly than at Fort Knox in October 1973 during a rehearsal for an exhibit of armored equipment and doctrine for the Army's research community and civilian contractors. "I have high hopes that all of us together in TRADOC . . . can begin to close that gap. Can begin with our concept, illustrate that concept with the scenario and extract from that scenario our capabilities and limitations and derive from that the direction we should [go] in the future. . . . " Speaking of the research and development community, he said, "They know what their little thing is all about, but nobody ever ties it together for them. Now that is what we want to do." DePuy, CVPR Prebrief, 1—2.
15. The literature on the October War is extensive. The best, most recent account that attempts to place the war in historical perspective is Chaim Herzog, *The Arab-Israeli Wars: War and Peace in the Middle East* (New York: Random House, 1982). See Herzog's bibliography for more titles.

16. William E. DePuy, "The Implications of the Middle East War on U.S. Army Tactics, Doctrine and Systems," typed transcript of briefing, February 1975, THO Files; and DePuy, "Keynote Address."

17. U.S. Army Combined Arms Center, "Analysis of Combat Data—1973 War (U)" (Fort Leavenworth, KS, July 1974), 1:21. This report is classified SECRET, but material used in this study is unclassified; DePuy to Hoffman, 18 December 1975; and Colonel Edwin G. Scribner, "Doctrinal Development by TRADOC, May 1973—December 1979," 1, THO Files.

18. CAC, "Analysis," 1:iii, vi.

19. DePuy to Chief of Staff of the Army, "Analysis of Combat Data, 1973 Mid-East War" (draft, 21 June 1974), 1, loaned to the author by Colonel Carter; and DePuy, "Implications," 53.

20. DePuy, Commanding General's Remarks at Fort Sill, 1—2; DePuy to Chief of Staff of the Army, 21 June 1974, 2.

21. DePuy, "Remarks to the Army Museum Conference," 6; and DePuy, "Keynote Address," 2—3.

22. DePuy, "Implications," 3—4, 65—66.

23. DePuy to Robert W. Komer, Rand Corporation, 24 April 1975, DePuy Papers.

24. DePuy to Chief of Staff of the Army, 21 June 1974, 5; and DePuy, "Implications," 24—25.

25. DePuy, Commanding General's Remarks at Fort Sill, 8; DePuy to Chief of Staff of the Army, 21 June 1974, 2—3; and DePuy, "Implications," 2, 18—21.

26. DePuy, "Implications," 55; and DePuy, Final interview, 8.

27. DePuy, Commanding General's Remarks at Fort Sill, 9; and DePuy, CVPR Prebrief, 7.

28. DePuy, "Implications," 59—60.

29. DePuy to General Frederick E. Weyand, 18 February 1976, 2, DePuy Papers.

Chapter 4

1. DePuy to TRADOC Staff, TRADOC Organization and Operations, 30 September 1974, THO Files.

2. Training Circular (TC) 71—4—2, *The Tank/Mechanized Infantry Team*, produced jointly by the U.S. Army Armor and Infantry Centers (Fort Knox, KY, and Fort Benning, GA, October 1974), reflected both the lessons of the 1973 Arab-Israeli War and DePuy's influence on tactics. Citing the "devastating lethality" of the "modern battlefield," its section on "Battlefield Dynamics" stressed that "The enemy has excellent weapons—if he can see you, he can kill you." Ibid., 9. It then prescribed techniques of movement based on overwatch, suppression of enemy fires, and use of terrain for cover and concealment. These concepts received more emphasis in U.S. Army Infantry School, TC 7—10—10, *The Rifle Company* (Fort Benning, GA, 31 January 1975); and U.S. Army Infantry School, TC 7—4, *The Mechanized Infantry Platoon* (Fort Benning, GA, February 1975). By June 1975, reflecting TRADOC's increased concern with the defense, the Infantry School supplemented these fundamentally offensive-oriented publications with U.S. Army Infantry School, TC 7—3—1, *How to Defend With Mechanized Infantry and Light Infantry Platoons*. U.S. Army Armor School, TC 17—15—3, *Tank Platoon* (Fort Knox, KY, 15 April 1975), 1, cited the 1973 Arab-Israeli War specifically to show that modern weapons "dominate the modern battlefield" and that "the U.S. Army must learn to fight outnumbered and win." By June 1975, nearly all the TRADOC centers were distributing, throughout the Army, colorful, concise, thoroughly illustrated pamphlets on a plethora of combat techniques. Each contained a preface to the effect that it was a basis for training pending revision of the appropriate manual, and many contained self-addressed, postage-paid questionnaires to

be returned to the proponent agency with recommended changes. See also Dr. Brooks Kleber, TRADOC Historian, Memorandum for Record, "DePuy Fort Knox Presentation," 8 November 1974, THO Files.

3. Likewise, the aforementioned training circulars cited in note 2 emphasized their relationship to the ARTEPs. For example, TC 7—3—1 stated in bold type on the front page, "This publication should be used in training and evaluation with the following ARTEPs," and it listed those for mechanized infantry task forces, light infantry battalions, and Ranger battalions.

4. General Starry testified to the importance of the ARTEP: "Here the process was easier—it filled a complete void. We were providing the field with something they simply didn't have and which they all recognized they needed badly. Like a dry sponge, they sopped up the liquid rapidly. And in so doing they played directly into the scheme of gaining their acceptance of the new ideas. For the ARTEPs are the action documents which implement the change. One can write FMs forever—if they aren't accepted and used, they are useless. But if people know they are to be scored in an evaluation on the basis of what is in the FM, then they quickly go to the FM to see what to do. This one was easier to handle and has not required nearly the persuasive effort that the FMs have. But only because the ARTEP filled a widely recognized, long-time void." Starry to Major Wilder M. Snodgrass, 25 November 1975, Starry Papers, USAMHI.

5. Colonel Zeb B. Bradford to Brigadier General William R. Richardson, "Infantry Platoon Tactics Fact Sheet," 23 January 1974, THO Files.

6. Major General Thomas M. Tarpley to Lieutenant General Orwin C. Talbott, et al., 12 April 1974, THO Files. General Tarpley's fears were not misplaced. Certainly, he sensed General DePuy's doctrinal and personal preference for the Armor School and General Starry. General Starry on more than one occasion hinted strongly that he should have proponency for all mechanized infantry, as in his "Observations From the Europe Trip," report to General DePuy on 1 May 1974, in which he noted that such was the successful arrangement preferred by the German Army. Starry to DePuy, "Observations From the Europe Trip," 1 May 1974, Starry Papers.

7. DePuy to Commandant—USAARMS, Commandant—USAIS, and Commandant—USACGSC, "Brigade Proponency," 8 May 1974, DePuy Papers.

8. DePuy, Interview with the author, West Point, NY, 1 June 1984.

9. Ibid.

10. Starry to DePuy, "Observations From the Europe Trip."

11. Ibid.

12. DePuy to Tarpley, Starry, and Brigadier General Paul F. Gorman, 8 May 1974, THO Files.

13. Gorman to DePuy, Memorandum, 3 July 1974, THO files.

14. Ibid.

15. Starry to DePuy, "Rationale for Changes in Tactics, Gunnery, ATT, ATP," 8 July 1974, Starry Papers.

16. Ibid.

17. All quotes are taken from "Combat Operations," an enclosure to DePuy to Donn [Starry], Tom [Tarpley], Dave [Lieutenant General David E. Ott], C. J. [Major General C. J. LeVan], Bill [Major General William J. Maddox], Jack [Major General John H. Cushman], and Hal [Major General Harold R. Parfitt], 23 July 1974, THO Files, or from an earlier draft of that document that includes several of them in DePuy's own handwriting, or from the basic letter itself, THO files.

18. DePuy to Starry, et al., 23 July 1974, THO Files.

19. DePuy to TRADOC Staff, TRADOC Organization and Operations Memorandum, 30 September 1974, THO Files.

20. The following sources were used for this account of Octoberfest: Colonel Cosby, Interview with Brooks Kleber, 13 February 1976, THO files; TRADOC, *Annual Historical Review, FY 76—77* (Fort Monroe, VA, 1978?), 28—29; Scribner, "Doctrinal Development by TRADOC," 3; Major General Burnside Elijah Huffman Jr. to Department of the Army, FORSCOM/TRADOC Training Conference, 29 October 1974, THO Files; DePuy to Weyand, 18 February 1976; and DePuy, Interview with the author, 1 June 1984.

21. DePuy, "Speech to OFTCON IV," 24 May 1977, 1, THO Files.

22. Cosby interview, 13 February 1976, 1. That General Walter T. Kerwin had kept TRADOC at arm's length is evidenced by his lukewarm response to ARTEPs: "General Kerwin's letter on training guidance was a disappointment . . . [it implies] that FORSCOM saw the ARTEP as being useful mainly for Reserve Component commanders—We have some educating to do in Atlanta." Gorman to DePuy, 9 July 1974, DePuy Papers.

23. DePuy to Weyand, 18 February 1976, 2, DePuy Papers.

24. DePuy to Major General John H. Cushman, et al., "Field Manuals," 10 October 1974, DePuy Papers.

25. Ibid.

26. DePuy, Interview with Brownlee and Mullen, sect. 2, 33; DePuy to General Horst Hildebrandt, chief of staff of the German Army, 13 December 1974, DePuy Papers.

27. Tarpley to DePuy, 7 October 1974; and Parfitt to DePuy, 21 October 1974; both in THO Files. DePuy was not to be dissuaded from his stand on tanks in mid-intensity warfare: "The infantry['s] . . . role is to support the tanks. That has been quite hard for the infantry school to stomach . . . the decisive offensive weapon is the tank. . . . The Israelis, Egyptians, Syrians, Russians, British, Germans and I accept it." DePuy, Commanding General's Remarks at Fort Sill, 19 June 1974.

Chapter 5

1. Doughty, "CGSC," 57.

2. U.S. Army Combined Arms Center, Pamphlet no. 1, "The CGSC Approach to Writing Doctrinal Literature," by John H. Cushman (Fort Leavenworth, KS, 18 September 1973), 6, hereafter cited as "The CGSC Approach."

3. Ibid., 8.

4. DePuy to Abrams, 21 June 1974, 4, DePuy Papers.

5. *John H. Cushman, U.S. Army*, biographical sketch (Fort Leavenworth, KS, 29 September 1975).

6. Ivan J. Birrer, "Dr. Ivan J. Birrer: Service at the Command and General Staff College, Fort Leavenworth, Kansas, 20 January 1948 to 30 June 1978," [Nine] interview[s] conducted by Major Robert A. Doughty [between 28 December 1977 and 25 January 1978], Fort Leavenworth, KS, May 1978, DTIC ADB 064 185L; Doughty, "CGSC," 112; and John H. Cushman, "Text of T.V. Presentation of FM 100—5," 9 December 1974, 3—4, loaned to the author by Colonel Doughty.

7. Earlier chapters established General DePuy's intellectual character. The assessment of Major General Cushman comes from Doughty, "CGSC," 113—23. Major primary sources that confirm Cushman's intellectual character are his "The CGSC Approach to Writing Doctrinal Literature," 4 ("The search for doctrine is . . . a search for truth. . . . It comes

from the interaction between . . . practical experience . . . and . . . the intellectual activity of the military professional . . . in the clash of ideas with other professionals."); Brigadier General B. L. Harrison, "/5 Curriculum Planning as Viewed by the Commandant," Memorandum, 26 September 1973, 1, loaned to the author by Colonel Doughty ("This is an academic institution. We should, therefore, look at any idea on its merits. Under the concept of academic freedom, I would like everyone to participate in the discussion as to what is best for our curriculum."); and Cushman, "Text," 3 ("It is better that a tactician go to the essentials of a single situation and solve it well than that he memorize all the rules ever written.")

8. "The CGSC Approach," 3—5.

9. Cushman, "Text," 3—4. At Fort Leavenworth, Cushman outlawed the acronym COCOA as a reminder that one should consider cover, obstacles, concealment, observation, and avenues of approach in terrain analysis. "Anyone who considers himself a tactician and who has to use COCOA to remind himself what to look for is in the wrong line of work," he declared, implying clearly that tactics is a nearly intuitive art that can only be learned by exposure to many different problems. DePuy would have assumed that most officers needed simple reminders of how to perform routine tasks.

10. U.S. Department of the Army, FM 100—5 (Test), "Operations," A. P. Hill draft (Fort Leavenworth, KS: U.S. Army Command and General Staff College, 2 December 1974). Pages in this draft manual are dated either 21 November or 2 December 1974. Quotes are from pages 1-1, 1-5, 2-4, 1-4, 1-2, 1-5, and 1-9 in that order.

11. Cushman, "Text," 3—5.

12. The unnumbered "The Division in the Defense" manual, dated December 1974, is in the THO Files. The comments quoted are clearly in General DePuy's handwriting.

13. Major General Starry wrote to General DePuy in November 1974: "The point is that in the combined arms business we should strive for as few manuals as possible. . . . If we get the right kind of deathless prose, we can do it." Starry to DePuy, TCs and FMs, electronic message, 1 November 1974, Starry Papers. General DePuy said he rejected the manual because "we didn't think that [it] conveyed to the Army the sense of urgency, that it was too scholastic, wasn't enough how to retrain, reorient and refocus an Army." DePuy, Interview with the author, 1 June 1984.

14. DePuy, Interview with the author, 1 June 1984.

15. DePuy, "Introduction to A. P. Hill II," Transcript of remarks loaned to the author by Colonel Carter.

16. Scribner, "Doctrinal Development by TRADOC," 4—5.

Chapter 6

1. For a description of the German reorganization of the armed forces, see R. Meller, "Federal Germany's Defense Potential," Part 1, "The Armed Forces," *International Defense Review* 7 (April 1974):167—74. This and K. Bradley, "NATO Strategy and the Security of Western Europe," *Journal of the Royal United Services Institute for Defence Studies* 119 (December 1974), 18—24, analyze both the financial and foreign policy influences on the West German Army. See also Federal Republic of Germany, Federal Minister of Defense, Press and Information Office, *The Security of the Federal Republic of Germany and the Development of the Federal Armed Forces*, White Paper 1973/1974 (Bonn, January 1974).

2. General Abrams' role in initiating national-level contacts with the West German Army, his reasons for doing so, and his designation of TRADOC as the executive agency are described in General DePuy's opening remarks to the 1975 TRADOC Commanders' Conference in TRADOC, *Headquarters United States Army Training and Doctrine Command Commanders' Conference* (Fort Monroe, VA, 1975), 12-6 to 12-7, THO Files; John Romjue,

Historical Staff Meeting With General DePuy, Memorandum, 5 September 1975, THO Files; and Richard Weinert and John Romjue, Memorandum for Record, 1 April 1976, THO Files. See also "Talking Paper on Field Manual 100—5, Operations," undated photocopy; and DePuy, Final interview, 8—9.

3. The meetings that yielded the joint concept papers took place beginning in April 1976 after General DePuy was satisfied that the Germans agreed in principle to FM 100—5. The results of these meetings therefore are beyond the scope of this work. They were important in DePuy's mind as starting points for possible joint development of materiel and to ensure that doctrinal consistency with the Germans continued as TRADOC wrote the entire family of manuals that supplemented FM 100—5. The first eleven joint concept papers included a description of the threat, an assessment of the influence of urban growth in West Germany on military operations, a review of antiarmor tactics and techniques, and a review of airmobile concepts. DePuy to Weyand, 14 November 1975; DePuy to TRADOC commanders and staff, electronic message, 11 December 1975; Weyand to DePuy, 24 December 1975, DePuy Papers.

4. As one of many examples in remarks DePuy made to the faculty of the U.S. Army Field Artillery School at Fort Sill, Oklahoma, on 19 June 1974, he twice mentioned the Germans, first praising Rommel's tactics in North Africa and later discussing the relationship of the new German Marder armored infantry fighting vehicle to German defensive doctrine. DePuy, Commanding General's Remarks at Fort Sill, 4, 14.

5. DePuy to Weyand, 24 February 1975, DePuy Papers.

6. Weyand to DePuy, 23 April 1975, DePuy Papers; and DePuy to Hildebrandt, 20 May 75, German Army Papers, THO Files.

7. Peter Chamberlain and Chris Ellis, *Panzer-Grenadiers: German Infantry, 1939—45* (London: Almark Publishing Co., 1972), 3—12.

8. The evolution of the armored infantry carrier from the *Panzergrenadier*-like half-track of World War II to the fully enclosed armored personnel carrier of the 1950s and 1960s tended to suggest a battlefield transport vehicle but not a combat vehicle, a tendency reinforced in the 1950s by emphasis on the carrier's ability to protect its crew from atomic radiation and fallout. The ROAD reorganization replaced the term "armored infantry" with "mechanized infantry" and moved proponency from the Armor School at Fort Knox to the Infantry School at Fort Benning. There, mechanized infantry doctrine did not develop in tandem and close doctrinal harmony with armor doctrine but became simply a variation of doctrine for regular infantry. As the Vietnam War increased in intensity, it completely absorbed Fort Benning's attention with the problems of counterinsurgency, airmobility, and jungle warfare, inherently light infantry tasks. The few mechanized infantry battalions that fought in Vietnam did indeed fight mounted to protect the soldiers from booby traps, ambushes, and small-arms fire, but the continuous close relationship between mechanized infantry and tanks characteristic of *Panzergrenadier* existed only in the armored cavalry regiments, if at all. Even then, the battlefield was usually one of armor-restrictive terrain and vegetation with an enemy who had little armor of his own. For details on the development of mechanized infantry in West Germany and the United States after 1945, see Richard M. Ogorkiewicz, "Mechanized Infantry," *Military Review* 54 (August 1974):67—73; and Richard E. Simpkin, *Mechanized Infantry* (Oxford, England: Brassey's Publishers, 1980), 25—43.

9. Starry to DePuy, "Observations From the Europe Trip," 4—5.

10. "A. P. Hill Conference (December 1974) Outline of 100—5 (Defense)," loaned to the author by Colonel Carter; DePuy, "Extracts From Address to Infantry Officers Advanced Courses at the U.S. Army Infantry School on Thursday, 13 February 1975," Memorandum for the Staff of the Infantry School, dated 21 February 1975, loaned to the author by Colonel Carter; and DePuy to Weyand, 29 April 1975, DePuy Papers.

11. Bradley, "NATO Strategy," 18.

12. Meller, "Germany's Defense Potential," 163.

13. General DePuy frequently acknowledged the deliberate compatibility of FM 100—5 with HDv 100/100. He wrote to General Hildebrandt in December 1974, "[In] a comprehensive review of U.S. Army doctrine . . . we relied heavily upon your new and excellent manual, HDv 100/100." DePuy to Hildebrandt, 13 December 1974, German Army Papers, THO Files. That the German manual was available throughout TRADOC's preparation of FM 100—5 is evidenced in that HDv 100/100, paragraph 2703, appears as a reference in the outline of FM 100—5 prepared at the December 1974 meeting at Fort A. P. Hill. Further, General Starry reports, "I helped write much of 100—5 and had constantly with me a copy of 100/100 as I did so." Starry to General Karl Schnell, commander in chief, Allied Forces Central Europe, 26 July 1976, Starry Papers.

14. Federal Republic of Germany, Heer, Regulation 100/100, *Command and Control in Battle* (Bonn: Federal Office of Languages and the Army Staff, September 1973), 1-1, hereafter cited as HDv 100/100.

15. Ibid., 2-1.

16. Ibid., 27-1.

17. Ibid., 27-1 through 27-6.

18. DePuy to Komer, 24 April 1975, 1—2.

19. Brigadier General W. B. Burdeshaw, CG TRADOC Visit to USAREUR/FRG, 23—30 October 1975, Memorandum for Record, German Army Papers, THO Files; DePuy to Weyand, 14 November 1975; DePuy, Opening Remarks to TRADOC Commanders' Conference, 11 December 1975. The Burdeshaw memorandum states on page 4, "Principles of both armies [U.S. and German] (combined arms) are the same and described in FM 100—5, [and HDv] 100/100."

20. DePuy to Weyand, 14 November 1975, 1—2, 5; DePuy, Opening Remarks to TRADOC Commanders' Conference, 11 December 1975, 12-7 to 12-8.

21. Lieutenant General Rudiger von Reichert to DePuy, 9 January 1976, loaned to the author by Colonel Carter; USATRADOC LNO GAO (Cologne) to Commander, TRADOC, electronic message, 20 January 1976; and DePuy to Reichert, 2 February 1976, 1—2, both in German Army Papers, THO Files.

22. DePuy to General Alexander M. Haig Jr., supreme allied commander, Europe, 13 October 1976, DePuy Papers. Interestingly, Haig as a lieutenant colonel had been Major General DePuy's operations officer (G3) in the 1st Infantry Division in Vietnam.

23. "I talked to DePuy—he has 'the same marching orders' I have—each of us from Brown and Abrams. . . ." General Robert J. Dixon, Memorandum, 9 October 1973, THO Files. See also DePuy to Hoffman, 18 December 1975, DePuy Papers; Weinert and Romjue, Memorandum, 1 April 1976; and DePuy, Interview with the author, 1 June 1984.

24. Eric C. Ludvigsen, "Army Weapons, Equipment 1972: Promise and Uncertainty," *Army* 22 (October 1972):124—28.

25. U.S. Department of the Air Force, Office of Information, Command Services Unit, "Biography—General George S. Brown," February 1978.

26. See chapter 3.

27. DePuy to Weyand, 14 November 1975, 5; and DePuy to Dixon, 20 November 1975, DePuy Papers.

28. General Robert J. Dixon, quoted in "Army's Training and Doctrine Command: Getting Ready to Win the First Battle . . . and the Rest," *Armed Forces Journal* 114 (May 1977):18.

29. DePuy to Dixon, 20 November 1975.

30. DePuy to Hoffman, 18 December 1975, 2; and "Chronology, TAC-TRADOC Dialogue," Tab E, 16 October 1973, and Tab F, 19 December 1973, both in THO Files. The airspace management working group had a draft joint manual prepared by April 1974. Major Army and Air Force overseas commands tested its procedures in 1974 and 1975, and the two services published it as a joint manual early in 1976.

31. For example, "I agree we are on the right track with the TAC-TRADOC interface. It's clear we need to continue to improve our dialogue with the Army." General David C. Jones, chief of staff, U.S. Air Force, to Dixon, 25 July 1975, THO Files.

32. FM 100—5 (Test, 1974), 5-2. General Cushman wrote about air-land warfare under the pseudonym Pegasus in 1965. Arguing for stronger ties between the Army and Air Force in doctrine, schooling of officers, and joint commands, he wrote "land warfare . . . in reality since 1920 has been 'air-land' warfare, in three dimensions, waged by a composite of land and air systems. . . ." Pegasus [John H. Cushman], "The Forty Year Split: The Healing Years, 1961—1965," *Army* 15 (October 1965):61—62, 64.

33. "Chronology, TAC-TRADOC Dialogue," 9—12.

34. Ibid., 12—13. Resistance to the concept must have come from TAC, because General DePuy had heard the briefing earlier at Fort Leavenworth and had responded enthusiastically. His turnabout at the April meeting was most likely because, sensing TAC's reservations, he did not want to damage the growing TAC-TRADOC relationship by overzealously forcing air-land battle on them.

Chapter 7

1. William Gardner Bell, *Commanding Generals and Chiefs of Staff, 1775—1983: Portraits and Biographical Sketches of the United States Army's Senior Officer* (Washington, DC: Center of Military History, U.S. Army, 1983), 144—46. Both DePuy and Starry confirm the changed environment after Abrams' death. "By that time I kind of felt like I wanted to finish what we started along the lines that we were proceeding, [and General Weyand] was a good soldier but he just wasn't intensely interested in the kinds of things we are talking about as I was and as Abe was and as Gorman was and Starry was and so on. He just wasn't." DePuy, Interview with the author, 1 June 1984. General Starry recalls that General Abrams was very much supportive of TRADOC's initiatives. Because Abrams was the only officer with sufficient clout to bring about a wholesale doctrinal reform, his illness and death made TRADOC more dependent on the October War as a persuasive case in point. Starry says that General Weyand supported TRADOC's initiatives but had not been a part of them from the start (i.e., planning Steadfast) and lacked the personal image in the Army to bring them about. Donn A. Starry, Interview with the author, Detroit, MI, 19 July 1984.

2. John L. Romjue, TRADOC Historian, Combat Developments Scenarios Briefing to the TRADOC Advisory Group, Memorandum for Record, 12 November 1974, THO Files.

3. DePuy, "Whether the Army Knows What It Needs or Not," Memorandum for Major General Robert Carter McAlister, 11 October 1974, THO Files.

4. Eric C. Ludvigsen, "Army Weapons and Equipment, 1973: The Tyranny of Rising Costs," *Army* 23 (October 1973):126.

5. John L. Romjue, Major General Huffman's Comments, Memorandum for Record, 7 November 1974, THO Files.

6. General William E. DePuy to General Frederick C. Weyand, chief of staff of the Army, 29 April 1975, DePuy Papers.

7. The Army's development of the MICV can be traced by reading Jerry Max Bunyard and Jerome B. Hilmes, "MICV—UTTAS," *Army* 23 (July 1973):21—24; "Infantry News," *Infantry* 63 (January—February 1973):2—3, 62—63; Emanuel Karbeling, "MICV Update," *Infantry* 64 (March—April 1974):7—9; and Jeff F. Cherry, "Mounted Combat," *Infantry*

65 (September—October 1975):12—15. DOD's skepticism about this program is evident in U.S. Department of the Army, Center of Military History, *Historical Summary*, for fiscal years 1971 through 1975. For example, on page 117, the 1975 summary states that cost overruns and mechanical failures "posed a threat to the future of the program."

8. DePuy to Weyand, 29 April 1975.

9. U.S. Department of the Army, FM 100—5, *Operations of Army Forces in the Field* (September 1968), 6-14 to 6-15.

10. John H. Cushman, *U.S. Army Operational Doctrine as Expressed in FM 100—5 and the Defense of Central Europe* (McLean, VA: MITRE Corporation, September 1978), 7—8. General Starry recalls that a major concern of his and General DePuy's was that Europe "was in a shambles" and that the officers there did not believe they could win. Starry interview.

11. Major General Orwin C. Talbott, "The Role of Mechanized Infantry," *Armor* 82 (March—April 1973):9—12. This article was a none-too-subtle message to the armor community that the infantry "forms the nucleus of the Army's fighting strength around which the other arms and services are grouped" and should continue to do so. It was also a plea for the MICV. Indeed, one suspects that the force-oriented defense may have been prompted as much by these parochial concerns as by an objective assessment of how to defend Europe. These thoughts were so prominent in Talbott's article. Also, see Doughty, *Tactical Doctrine*, 42—43.

12. John L. Romjue, Memorandum for Record, 12 November 1974, THO Files.

13. Brigadier General Paul F. Gorman, "How to Win Outnumbered," enclosure to Gorman to Major General Donn A. Starry, 8 January 1974, Starry Papers.

14. Ibid.

15. TRADOC, "Combat Operations," Draft concept paper enclosed in DePuy to Tarpley, et al., 23 July 1974, 15, THO Files.

16. Ibid.

17. See chapter 4.

18. Scribner, "Doctrinal Development by TRADOC," 2.

19. Starry to Gorman, July 1974, Starry Papers.

20. Scribner, "Doctrinal Development by TRADOC," 2.

21. Starry to Cushman, 29 October 1974, Starry Papers.

22. See chapter 5.

23. Scribner, "Doctrinal Development by TRADOC," 6.

24. Ibid.

25. Major General Donn A. Starry, "Modern Armor Battle II: The Defense," *Armor* 84 (January—February 1975):5—7.

26. Ibid.

27. TRADOC, "Combat Operations," 17.

28. A copy of the outline was loaned to the author by Colonel (then Major) Carter.

29. Lieutenant Colonel David L. Tamminen, "How to Defend Outnumbered and Win," *Armor* 84 (November—December 1975):39—44.

30. Ibid.

31. Quotations from HDv 100/100 were taken from the following pages in the order they appear in the text: 27-20; 27-5 to 27-6 and 27-15; 27-1; 4-8 to 4-9; 10-9 and 27-9; 27-4 and 27-7; 27-3; 27-16 and 27-20; 10-5; 27-15.

32. The idea of generals and colonels moving battalions about the battlefield from one position to another pervades chapter 5 of FM 100—5. For example, "The defending commander thus directs the fight by specifying which battle positions his units will occupy and what they will do there—defend, support, attack." FM 100—5 (1976), 5-5.

33. HDv 100/100, 10-2.

34. Ibid., 10-3 to 10-5. General von Reichert emphasized these points in comments on a TRADOC pamphlet on antiarmor doctrine that he sent to DePuy: "Surprising concentrations of forces on decisive spots, surprising transition from one type of combat to another, and missions that do not strangle the commander's initiative, are qualities characterizing delaying operations as well as defense." Reichert to DePuy, 9 January 1976, THO Files.

35. HDv 100/100, 27-20.

36. Some of these officers were Lieutenant Colonel Jack Nicholson and Majors Samuel Wilder, David Meade, Gerald Granrud, and William Carter. Scribner, "Doctrinal Development by TRADOC," 1. See also Major General Huffman, Interview with Richard Weinert, TRADOC Historian, Memorandum for Record, 7 November 1974, THO Files.

37. General Paul F. Gorman, Interview with the author, The Pentagon, Washington, DC, 22 July 1984.

38. Ibid.; and DePuy, Interview with the author, 1 June 1984.

39. Colonel John A. Gazely, U.S. Army, Ret., chief, Department of Tactics, U.S. Army Command and General Staff College, 1973—75, to the author, 30 March 1985.

40. Lieutenant Colonel J. W. Nicholson, General DePuy's Comments on How to Fight Manual Content, Memorandum for Record, 28 February 1975, THO Files.

41. Major General Paul F. Gorman, Fact Sheet: Status of FM 100—5, Memorandum for TRADOC Staff, 19 January 1976, THO Files.

42. General William E. DePuy, "The Army Training System Overview," printed transcript of speech delivered to the Army FORSCOM-TRADOC Conference, 24 May 1977, loaned to the author by Colonel Carter.

43. Ibid.

44. Ibid.; DePuy to Weyand, 18 February 1976.

45. DePuy, "Army Training System Overview."

46. For example, "The Army's evaluation of the Middle East war also ends the love affair between the generals and the helicopters. The choppers, it was agreed, could not survive over the battlefields of Sinai or the Golan Heights. . . ." Drew Middleton, "U.S. Alters Military Stance as Deadlier Arms Spread," *New York Times*, 9 July 1975.

47. Colonel William Murry, Interview with the author, Fort Belvoir, VA, 15 March 1984. Colonel Murry was chief, NUDORE Study Team, Fort Leavenworth, KS, 1974—76.

48. For a discussion of U.S. Army doctrine for tactical nuclear weapons and a critique of the FM 100—5 (1976), see John P. Rose, *The Evolution of U.S. Army Nuclear Doctrine* (Boulder, CO: Westview Press, 1980).

49. Murry remembers that a major hindrance to the publication of FM 100—5—1, which did not appear until November 1976, was German objections to some aspects of U.S. fire planning. A West German officer attending the USACGSC at Fort Leavenworth leaked

materials from tactical problems in the course to the German Army, causing a minor furor over U.S. controls over target planning. Murry interview.

50. Gorman, Status of FM 100—5, 19 January 1976, THO files.

51. Scribner, "Doctrinal Development by TRADOC," 11.

52. Doughty, *Tactical Doctrine*, 42.

53. The officer was then Lieutenant Colonel (now Brigadier General) Bobby C. Robinson. These paragraphs are based entirely on Robinson to the author, 1 May 1984.

54. Scribner, "Doctrinal Development by TRADOC," 11; and Starry to Major Wilder M. Snodgrass, 25 November 1975, Starry Papers.

55. DePuy, "The TRADOC Strategy," presentation to the 1975 TRADOC Commanders' Conference, 10—11 December 1975, published in *Commander's Conference Ft. Monroe, Virginia, 10—11 December 1975*, loaned to the author by Colonel Carter.

56. Richard Weinert and John L. Romjue, TRADOC Historians, Memorandum for Record, 1 April 1976, THO Files.

57. Nicholson, General DePuy's Comments, 28 February 1975, THO Files.

Chapter 8

1. [Major William G.] Carter to Deputy Commanding General [of TRADOC], Distribution of FM 100—5, *Operations*, Memorandum, 15 October 1976, loaned to the author by Colonel Carter; Lieutenant Colonel Thomas P. Carney to General DePuy, Report on Visit to the 3d Infantry Division, Memorandum, 5 October 1976, loaned to the author by Colonel Carter; and Starry interview.

2. "The Army probably has never experienced a more radical change [than the pentomic division] during peacetime in its thought, doctrine, and organizations." Doughty, *Tactical Doctrine*, 18.

3. DePuy to Weyand, 18 February 1976, DePuy Papers. This document has been published in Romjue, *Active Defense*, appendix C. DePuy elaborated on his ideas of the changing nature of the Army in his final interview as TRADOC commander. DePuy, Final interview.

4. Richard Weinert and John L. Romjue, TRADOC Historians, Meeting with General DePuy, 30 March 1976, Memorandum for Record, 1 April 1976, THO Files.

5. Talking Paper on Field Manual 100—5, *Operations*, typed and photocopied, undated, THO Files.

6. DePuy to Weyand, 18 February 1976, 5.

7. DePuy, Interview with Brownlee and Mullen, sect. 8, 4. General DePuy anticipated that revisions and additions to the manual would be necessary and, for that reason, had it published in a loose-leaf, snap-ring binder to facilitate replacement of pages.

8. Haig to DePuy, 10 September 1976, photocopy loaned to the author by Colonel Carter.

9. DePuy to Haig, 13 October 1976, DePuy Papers; and DePuy, Interview with the author, 1 June 1984.

10. FM 100—5 (1976), 4-1 to 4-2.

11. Starry, Interview with the author.

12. The critique and consequent development of the 1982 edition of FM 100—5 are treated in detail in Romjue, *Active Defense*.

13. Starry, "A Tactical Evolution—FM 100—5," 3; and William E. DePuy, "FM 100—5 Revisited," *Army* 30 (November 1980):12.

14. U.S. Department of the Army, FM 100—5, *Operations* (1982), i.

15. As this was being written, the first such acknowledgement of the 1976 edition's value appeared in *Military Review*: "Whatever its deficiencies, the controversial manual of 1976 served the Army well. It recalled the Army's attention to the most dangerous threat, and it generated an unprecedented level of professional debate about how to fight." Lieutenant Colonel L. D. Holder, "Doctrinal Development, 1975—1985," *Military Review* 65 (May 1985):51. Lieutenant Colonel Holder played a significant role in the writing of the 1982 manual.

16. Romjue, *Active Defense*, 55.

17. Romjue describes the development of the 1982 manual in detail. It was an exercise in consensus building, beginning with General Starry returning proponency for FM 100—5 to Fort Leavenworth in 1977.

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COMBAT STUDIES INSTITUTE

Missions

The Combat Studies Institute was established on 18 June 1979 as a department-level activity within the U.S. Army Command and General Staff College, Fort Leavenworth, Kansas. CSI has the following missions:

1. Conduct research on historical topics pertinent to doctrinal concerns of the Army and publish the results in a variety of formats for the Active Army and Reserve Components.
2. Prepare and present instruction in military history at USACGSC and assist other USACGSC departments in integrating military history into their instruction.
3. Serve as the U.S. Army Training and Doctrine Command's executive agent for the development and coordination of an integrated, progressive program of military history instruction in the TRADOC service school system.

SYNOPSIS OF LEAVENWORTH PAPER 16

The 1976 edition of Field Manual 100—5, *Operations*, presented a new military doctrine for the U.S. Army as it emerged from the Vietnam War and faced the buildup of Soviet forces threatening Western Europe. This Leavenworth Paper explains the development of this doctrine and evaluates its significance for the Army.

The doctrine in FM 100—5 represented the tactical thinking of General William E. DePuy, the first commander of the U.S. Army Training and Doctrine Command. DePuy wanted the new doctrine in FM 100—5 to be an agent of change for the Army.

As TRADOC commander, DePuy transformed training and combat developments for the Army, but he did not intend to rewrite doctrine substantially until the 1973 Arab-Israeli War demonstrated the new lethality of the future battlefield. The U.S. Army learned from this war that it was not prepared for mid-intensity conflict, which encouraged General DePuy to rewrite all the Army's field manuals.

Doctrine writers at the U.S. Army Armor and Infantry Centers and the Combined Arms Center, however, failed to achieve a consensus on how the Army should fight its forces due to their different approaches to explaining combined arms warfare. Faced with this failure, DePuy was forced to have Headquarters, TRADOC, write the Army's capstone manual. The role of armor, German doctrine, and the Air Force missions were all key elements in the new doctrine that carried General DePuy's impress.

The 1976 edition of FM 100—5 introduced the terms "active defense" and "air-land battle" and recognized the total interdependency of the Army and Air Force. This new manual initiated a doctrinal reorganization designed to prepare the Army for the future. Ironically, a process of change began that led to criticism of the new doctrine and the manual's rapid demise. Critics claimed FM 100—5 placed too much emphasis on defense, ignored the psychological dimensions of warfare, and focused too narrowly on combat in Europe. Nevertheless, the manual called the Army's attention to the importance of doctrine and had a significant influence on the doctrine that succeeded it.